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POTOSÍ, ITS MINES AND ITS INDIANS

by

Louis J. Casa

A Thesis Submitted to the Faculty of the Graduate School
of Loyola University in Partial Fulfillment of
the Requirements for the Degree of
Master of Arts

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PREFACE

The purpose of this thesis is threefold: to present life in Potosi and its mines, to describe the role of the Spanish colonists as administrators of the mines, and to give an account of the Indians who were forcefully recruited to work them.

The story of Potosí is a strange narrative of courage, accomplishment, and ruthlessness. It is a story about untold riches and dissipations. In Potosí a drama unfolded in which all human passions interplayed: love, hatred, justice, injustice, brutality and compassion. In the words of the poet Alonso de Ercilla this was Potosi:

> Mira allá a chuquiabo que metido está a un lado la tierra al Sur marcada. Y adelante el requísimo y crecido cerro de Potosí, que de cendrada plata de ley y de valor subido tiene la tierra envuelta y amasada. [1]

This is but another chapter of the Spanish conquest in the New World. An attempt has been made to consult as many primary sources as were available to the writer, especially the memorias or relaciones of the various viceroys and collections of documents pertaining to colonial Perú.

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[1] Eugenio Maffei and Ramón Rua Figueroa, Apuntes para una Biblioteca Española de Libros, Folletos y Artículos impresos y manuscritos, relativos al conocimiento y explotación de las riquezas minerales y a las Ciencias auxiliares (Madrid: 1871), II, p. 251.

I acknowledge my indebtedness to Reverend Charles R. Ronan, S.J., who guided my efforts, Dr. Joseph A. Gagliano, Dr. Paul Lietz, and Mr. Fred Hall, of the Newberry Library, for their invaluable suggestions and criticism in the writing of this thesis.

An explanation of Spanish weights, measures, and monetary values will be found in the Appendix.

LIFE

Louis John Casa was born in San Lucido, Italy, on May 24, 1934. He attended grammar school and completed the first year of high-school in that country. In March of 1947 he immigrated to America along with his Mother, brother and sister.

Louis attended Fenger High School, Wilson Junion College, and in September, 1955, he was admitted to the University of Loyola, Liberal Arts School. He received his B.S. degree in History in February of 1958. After graduation he entered upon a business career in the cosmetic field and pursued his studies towards a Master's degree in History on a part-time basis. He also attended South-East Junior College for three semesters in order to gain familiarity in business administration, corporate structure, and educational techniques taught in the Chicago Public School System.

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CHAPTER I

DISCOVERY OF SILVER AND FOUNDING OF POTOSI

In 1545, Gulca, an Indian in the service of Juan de Villarroel, one of the pacificadores of the province of Charcas, stumbled on a silver deposit which later became famous as the Cerro of Potosi, the greatest single source of silver in the New World. According to an old Indian legend, the Incas knew of the rich deposits but were forbidden to mine them because they were meant for others. Modesto Omíste, Bolivian historian, attributes the discovery to an Indian named Diego Gualpa who reported it to Juan de Villarroel, Alfarez Francisco Centeno, Pedro Cotamito, and Santandía.[1] Be that as it may, the fact is that on April 21, 1545, Villarroel registered the first claim in his name and that of Gulca, who disappeared shortly afterward.[2] In 1546 Villarroel wishing to gain recognition for the discovery and founding of Potosi, sent to Charles V a detailed description of the discovery and ninety-six thousand ounces of silver as payment of the royal fifth. The Emperor confirmed title of the discovery, conferred

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[1]Modesto Omíste, Obras Escogidas (La Paz, Bolivia: 1941), p. 77.

[2]Bernard Moses, The Spanish Dependencies in South America, An Introduction to the History of Their Civilization. Vol. 2 (London: 1914), p. 4. There are at least two acceptable spellings of the Indian: Gualpa or Gulca.

on Villarroel the Order of Santiago and bestowed on Potosí the title of Villa Imperial.[3]

In 1568 the family of Gulca entered a plea of recognition with the royal Audiencia of the district of Charcas claiming that he had been the true discoverer and had been deprived of his rightful share of the discovery; they, now, wished to receive the compensation which was denied to their father.[4] A favorable reply was received ordering that the heirs of Gulca, the true discoverer of the mine, be given compensation. The document was signed by Antonio de Herasso, judge of the Audiencia de Charcas.[5]

The discovery of the 2,000 foot hill of silver in the

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[3]Ibid., p. 3; also, Nicolas de Martínez Arzanz y Vela, Historia de La Villa Imperial De Potosí, (MDXLV-MDLXXVII). Riquezas Incomparables de Su Famoso Cerro. Grandezas De Su Magnánima Población. Sus Guerras Civiles y Casos Memorables (Buenos Aires: 1945), p. 127. This edition of the Historia, which embraces only the first fifty chapters of Arzanz's celebrated work, was brought out by Gustavo Adolfo Otero in 1943 and reprinted in 1945 under the auspices of the Fundacion Universitaria Patino of La Paz, Bolivia. Fortunately, the entire manuscript will be published in August, 1966 as a Brown University Bicentennial Publication under the editorship of Lewis Hanke and Gunnar Mendoza. In the Colver Lectures, which he delivered at Brown University in 1965, Dr. Hanke discusses this remarkable history of Potosí which covers the years 1545 to 1737. These Lectures will prove to be an indispensable adjunct to the magistral edition soon to appear. They were published under the title of Bartolome Arzans de Orsua y Vela's History of Potosi, Brown University Press, Providence, Rhode Island, 1965.

[4]Colección de las Memorias o Relaciones que Escriben los Virreyes del Perú Acerca del Estado en que Dejaban las Cosas Generales del Reino (ed.) Ricardo Beltrán y Rozpide (Madrid: 1921), pp. 97-98; also, Lewis Hanke, "Luis Capoche and the History of Potosi," Inter-American Economic Affairs, Vol. 12, No. 2 (Autumn 1958), pp. 19-51. Hanke states that a royal order dated May 14, 1578, was received by the Audiencia de Charcas instructing that body to give Juan Gualpa and his brothers financial assistance. P. 22.

[5]Colección de las Memorias, pp. 97-98.

shape of a sugar loaf, majestically rising at approximately 16,000 feet above sea level, proved to be rich beyond all expectations yielding, according to Clarence Haring, six hundred million dollars worth of silver throughout the colonial period.[6] The founding of Potosí was a challenge of no mean proportion. Ricardo Beltrán y Rozpide states that the work was begun by only sixty-five Spaniards and that this number rapidly increased with the addition of Indians, mestizos, and forasteros who had been lured to Potosi by the news of the silver discovery.[7] There were also a limited supply of fresh water, fuel, and a few poorly cultivated valleys. The following is a geographical description of Potosi and its famed Cerro:

> The founding of Potosí, from the point of view of human considerations, could not have been more discouraging. The water supply was limited, the earth unfit to grow food, without easy access with the exterior, at the mercy of the wind, without fuel in its proximities, and more than four thousand meters of altitude; only the extraordinary richness of its mines could justify its founding. But in general, the hill offered itself as an isolated mass without roots. A grey mass, high and cold, immeasurably rich, but also immeasurably isolated. Only the hope of abandoning it quickly could inspire the first acts of those who were determined to establish themselves on the hill and face all the rigors of an inimical nature which the natives had never challenged. 8

By 1585 there were still very few inns located along the

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[6]Hubert Herring, A History of Latin America (New York: 1956), p. 199.

[7]Colección de las Memorias, p. 96.

[8]Documentos de Arte Colonial Sudamericano, "La Villa Imperial de Potosí." Publicaciones de la Academia Nacional de Bellas Artes de la República Argentina (Buenos Aires: 1943), p. 138.

treacherous paths between Potosí, La Paz, and Cuzco where travelers could rest. However, there were numerous places where one could purchase supplies and goods especially for those leaving Potosi with their silver.[9]

No sooner had work begun in Potosí, than a clash occured between the followers of Francisco Pizarro, the conqueror of Peru, led by Alonso Marquéz, and Francisco Centeno, the king's representative, over control of Potosí. Centeno emerged as victor.[10] An uneasy peace was restored by 1547, though violence flared from time to time. In 1564 Castilians and Andalusians fought against a coalition of Portuguese and Estremedurans in several encounters in which twenty-three were killed and fifty were wounded.[11] Juan Fernandez in 1583 hatched a conspiracy through which he hoped to proclaim himself king of Potosi. The authorities discovered the plot and arrested him.[12] Perhaps, the bloodiest phase of the civil wars in Potosí, was the War of the Vicuñas. The struggle lasted for at least three years, 1620 to 1623, and it was reported that in 1623 alone 2,000 were killed or died of wounds and 3,000 were hanged.[13] Lewis Hanke states that:

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[9] Monumenta Peruana (ed.) Antonius de Egana. Tomo III, (Romae: 1954), p. 565.

[10] Bartolomé Martinez y Vela, Anales de la Villa Imperial de Potosi (La Paz, Bolivia: 1939), p. 6.

[11] Ibid., p. 29.

[12] Lewis Hanke, La Villa Imperial de Potosí, un capítulo inédito en la historia del Nuevo Mundo (Sucre, Bolivia: 1954), 17.

[13] Helen Douglas-Irvine, "All the Wealth of Potosí," The Pan-American Magazine, XLII (July, 1930), pp. 158-159.

> Por muchos años Potosí fué suprema ciudad del ague y de la turbulencia. La traición, el homicidio y la guerra civil florecieron como fruto natural del juego, la intriga, la enemistad entre españoles peninsulares y criollos americanos y la rivalidad por el favor de las mujeres. 14

Civil wars not withstanding, Potosí grew in size and population. In 1545 there were 170 Spaniards and 3000 Indians;[15] only two years later, 1547, there were 14000 Spaniards who occupied 2500 houses.[16] The convent of San Francisco and the Indian churches of Santa Barbara and San Lorenzo were also built in 1547.[17] By 1555 Potosi could boast, among other achievements, of the Hospital de San Juan de Dios.[18] Six years later, 1561, the city was authorized to form its own municipality, cabildo and regimiento, independent of La Plata and at a cost to the Villa of 112,000 pesos, thus freeing the Villa from the jurisdiction of La Plata, 160 kilometers away.[19]

News of immense riches to be found at Potosí attracted both Spanish and foreign adventurers. Steadily the population increased till by 1611 there were 150,000 inhabitants, fifty thousand of whom were Indians who had been recruited to work the

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[14] Hanke, La Villa Imperial de Potosí, p. 16.

[15] Martinez y Vela, Anales, p. 6.

[16] Ibid., p. 6.

[17] Pedro Vicente Cañete y Domínguez, Potosí Colonial, Guia Histórica, Geográfica, Política, Civil y Legal Del Gobierno E Intendencia De La Provincia De Potosi (La Paz, Bolivia: 1939), 122.

[18] Ibid., p. 122.

[19] Colección de las Memorias, p. 96.

mines or who had come voluntarily and had remained, according to a census taken by the Licenciado Bejarano, President of the Audiencia de Charcas.[20] Hanke claims that the population of Potosi reached its zenith in 1650 with 160,000 souls.[21] From the beginning of the conquest the Spanish Crown had specifically forbidden foreigners from entering the Indies;[22] however, by 1657 some Dutch, Irish, French, Portuguese and English had already either resided in Potosi or passed through it.[23] Hanke further states that foreigners came to Potosí in such large numbers that the Crown decided to investigate the foreign population and to rid the city of vagabonds and trouble makers.[24] But some foreigners were responsible Potosinos and that "as early as 1559 we find a Portuguese named Gaspar Collazo doing business in Potosí."[25]

Hanke points out that Portuguese were to be found everywhere in Spanish America even though no legislation permitted their entering those dominions, not even during the period of

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[20]Juan del Pino Manrique, "Descripción de la Villa Imperial de Potosi, y de los Partidos Sugetos a su Intendencia," Provincias Del Rio De La Plata (ed.) Pedro de Angelis. Primera Edición. (Buenos Aires: 1836), pp. ii-iii.

[21]Hanke, La Villa Imperial de Potosí, p. 14.

[22]Recopilación De Leyes De Los Reynos De Las Indias (Madrid: 1943), Lib. IV, Tit. 1, Ley 3.

[23]Acarete du Biscay, A Relation of Mr. R. M.'s Voyage to Buenos Ayres: And thence by Land to Potosi (London: 1716), p. 65.

[24]Hanke, La Villa Imperial de Potosí, p. 64.

[25]Hanke, The Portuguese in Spanish America, with Special Reference to the Villa Imperial de Potosi (Columbia University: 1961), p. 7.

1580 to 1640, when Portugal was politically fused to Spain. There were several Portuguese who played prominent roles or who were connected in some fashion with Potosí. Antonio de Acosta, who wrote Historia de Potosí, was a Portuguese who resided in the city from 1579 to 1657.[26] Antonio León Pinelo, one of the principal officers of the Council of the Indies, the Cronista Mayor de las Indias, and a participant in the preparation of the Recopilación de las leyes de las Indias, was a Portuguese-Jew whose family had fled Lisbon for Buenos Aires and had eventually moved to Potosí, where his father, Diego López de Lisboa, became a wealthy merchant.[27] In a letter written to the Crown on February 20, 1584, the Licenciado Ruano Tellez, fiscal de los Charcas, complained that the number of foreigners arriving in Spanish territory was great and especially the Dutch and English corsairs who came to Potosí through the port of Arica, which was the port for Potosí on the Pacific coast of Perú.[28] Informing the Consejo de Indias on January 28, 1549, about the status of Potosí, the Licenciado Gasca wrote that Diego Centeno had complained to him about "gente perdida, que en cantidad había acudido y de cada dia

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[26] Ibid., pp. 30-35. Hanke points out that he was unable to locate a copy of Acosta's work but relies on Orsua y Vela's testimony that Antonio de Acosta or da Costa did exist and did write a history of Potosí.

[27] Ibid., pp. 10-12.

[28] La Audiencia De Charcas, Correspondencia De Presidentes y Oidores (ed.) Roberto Levillier. Three Volumes. (Madrid: 1922), II, p. 114.

acudía aquel asiento de Potosí."[29]

Building went on carelessly at Potosí. Nicolas de Martinez Arzanz y Vela described it as follows:

> Muy adelante iba la fundación; que, como no se embarazaban ni en nivelar las calles, ni ahondar cimientos, ponían piedras sobre piedra y adobe sobre adobe con gran priesa, por cuya causa quedó muy mal formada la villa y las calles tan angostas que se les podía dar nombre callejones. 30

But Potosí was not a place which attracted men for farming or for intellectual pursuits; it was a mining frontier where fortunes were quickly made and lost, a place in which men sought diversion and excitement. However, Potosinos built impressive churches, convents, elaborate dwellings, dams, and even a theatre, but not a single hotel or inn for strangers, forcing newcomers to seek hospitality in private homes. In short, they exhibited the exuberance of the times and the good and the bad found in men of any age.

With the coming of Francisco de Toledo, fifth veceroy of Perú, the viceroyalty and particularly Potosí were markedly effected. Toledo had been sent to Perú to restore order, quell the frequent Indian uprisings and raids of the Chiriguanes, and to lift the sagging silver production. In 1572 he visited Potosí where he was feasted for fifteen days. He was not impressed by what he saw: narrow streets which often ended in blind alleys,

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[29] Gobernantes Del Perú, Cartas y Papales Siglo XVI (ed.) Roberto Levillier. Fourteen Volumes. (Madrid: 1921), I, p. 136.

[30] Arzanz y Vela, Historia de la Villa Imperial, p. 125; also, Hanke, "Luis Capoche and the History of Potosí," p. 30.

no reservoirs to contain the rain water so abundant in the summer months and crucially needed to turn the wheels of the grinding mills, and most importantly a sagging mining industry. He immediately ordered a new square built and the streets of the city widened.[31] He introduced the patio process of amalgamation with quicksilver, initiated by Bartolomé de Medina in New Spain, which replaced the guayaras, or furnaces used by the Indians in smelting the ore.[32] He ordered the transfer of the Casa de Moneda from Lima to Potosí.[33] And with the cooperation of a few interested Potosinos, he initiated the construction of the first lake to be built above the city, which will be commented on later.

By 1598 Potosí measured two leagues in circumference with 594 streets. The Spanish quarter alone had 268 large ones and 16,000 houses.[34] Toledo ordered that the city be divided into two sectors with the Spanish population centered in the northern sector and the Indians in the southern portion.[35] It was in the northern sector, therefore, that the Spaniards developed their society, a blend of impressive churches, dance halls, and gambling casinos.[36] At the beginning of the seventeenth century

[31]Cañete y Domínguez, Potosí Colonial, p. 130.

[32]C. H. Haring, The Spanish Empire in America (New York and Burlingame: 1963), p. 245.

[33]Martínez y Vela, Anales de la Villa Imperial, p. 32.

[34]Ibid., p. 51.

[35]Douglas-Irvine, "All the Wealth of Potosí," p. 159.

[36]Lewis Hanke, The Imperial City of Potosi, An Unwritten Chapter in the History of Spanish America (The Hague, Martinus

there were at Potosí 700 to 800 professional gamblers and 120 well-known prostitutes.[37] The Indians, on the other hand, lived in their crowded sector in which three churches with a priest in each were to be found. The natives received instructions in the Faith and the sacraments.[38] Spaniards, Negroes, and mulattoes were forbidden to live among the Indians to prevent their being exploited.[39] Spanish merchants were allowed only three days at one time to conduct their business among the natives.[40]

Potosi depended on the output of its famed Cerro for its continued existence as a major center of mining and commerce; its importance was closely related to the amount of silver extracted. In flush times activities in Potosí amazed all new arrivals. Pedro Cieza de León, soldier, traveler, and author, writes in 1549 about what he saw at Potosí:

> I saw the fair several times and noticed much trading. The Indians alone dealt daily for the value of 25000 or 30000 pieces of eight in gold and some days even above 40000 in so much that I believe no Fair in the world did ever equal it. 41

Nijhoff: 1956), p. 2. Hanke states that "by the end of the 16th century there were fourteen dance halls, thirty-six gambling houses and one theatre to which the price of admission ranged from forty to fifty pesos."

[37] Hanke, La Villa Imperial, p. 16.

[38] Audiencia De Charcas, I, p. 455.

[39] Recopilación, Lib. VI, Tit. 3, Ley 21.

[40] Ibid., Lib. VI, Tit. 3, Ley 24.

[41] Pedro de Cieza de León, The Seventeen Years Travels of Peter de Cieza, through the mighty kingdom of Peru, and the large provinces of Cartagena and Popayán in South America: from the

Vicente Canete y Dominguez, who was sent to Potosi in the last quarter of the eighteenth century as Asesor General, noted in his history of the city, Potosí Colonial, that Potosinos spent millions of pesos for celebrations. When silver was plentiful, he stated that:

> Este pueblo era en lo antiguo tan opulento y rico, y tan espléndido en sus funciones, que en la coronación del Sermo. Emperador Carlos V, se gastaron 8 millones; en las exequinas del Sr. Dm. Felipe III, 6 millones; y así con los demás Reyes de Castilla. 42

Acarete du Biscay, an English merchant who entered the Indies with the aid of the captain of a Spanish ship, witnessed the pomp of Potosí. He had left Cadiz on a ship licensed to trade at Buenos Aires and as far as Potosí. The ship arrived at Buenos Aires in March of 1658. Biscay led a pack of mules carrying wares to the altiplano, a distance which was covered in fifty-three days.[43] In Potosí he marvelled at the spectacle:

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city of Panamá, on the isthmus, to the frontiers of Chile. Translated by John Stevens (London: 1711), p. 231.

[42]Cañete y Dominguez, Potosí Colonial, p. 126.

[43]Biscay, A Relation of Mr. R. M.'s Voyage, pp. 3-4, pp. 7-8, p. 61. Acarete du Biscay possibly was commissioned by English commercial interests to survey the possibility of expanding English trade with Chile and Perú. He was possibly chosen for this assignment because of his ability to speak Spanish fluently and for his background in commerce. Upon returning to England, he consigned his journal to John Darby who in turn published Acarete's account and dedicated it to the "Honourouble the Court of Directors of the South-Sea Co." Darby's introduction to the book is of singular importance since it reveals English interest in the silver of Perú. He stated that "as you are already possessed of a noble settlement at Buenos-Ayres, to which the Navigation is open all year, I don't doubt but by your wise direction, under the patronage of your august governor, our wealth and commerce will be vastly increased: this way being evidently the easiest and speediest to convey the product and manufactures of Europe to

> Great rejoicings. All work stopped for a fortnight. All the people mingled for the celebration...the ladies being at the windows and casting down abundance of perfumed waters and great quantities of dry, sweet meats...a great many pieces of gold and silver were distributed and thrown among the people, in the name of his Catholic Majesty: and there were some particular persons that had the prodigality to throw away two or three thousand crowns a man among the mob. 44

He also saw a religious procession in which the Host was carried to the Church of the Recollects upon a road that had been paved especially for the occasion with bars of silver.[45] No wonder, then, that the accounts brought back home by visitors who had been in Potosi gained for it the admiration of those who heard or read about the fabulous city. Canete y Domínguez commenting on the wealth of some Potosinos tells how General Pereyra gave his daughter, Doña Placida Eustaquia, a dowry of 2,300,000 pesos in 1579; how General Mejia's daughter received a dowry of 1,000,000 pesos in 1612; and how Doña Catalina Argandona brought to her husband, Luis de Esquivel, a dowry of 800,000 pesos. Up to 1647 there was no dowry smaller than 200,000 pesos.[46] Hanke states that in the sixteenth century Potosinos spent 1,200,000 pesos yearly for Castilian clothes, women's dresses were as fine as any to be found in Spain itself, and that "miners kept expensive mistresses...Potosinos indulged in gaudy knightly tournaments, pro-

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Chile and Perú, and also the best and safest to bring gold and silver from thence into this part of the world."

[44] Ibid., pp. 89-90.

[45] Ibid., p. 90.

[46] Cañete y Dominguez, Potosí Colonial, pp. 126-127.

cessions, and other pleasures with a medieval flavor; (and) bullfights were popular."[47]

From 1572 on, the silver mines at Potosí became entirely dependent on mercury from Huancavelica for in that year the Viceroy Toledo introduced the patio process as mentioned before. Hence an adequate supply of mercury was necessary for the amalgamation process.[48] The supply of mercury available became a crucial factor in the operation of the silver mines. When its production declined at Huancavelica, the Crown was forced to import it from Europe at a greater cost to the miners. However, not all Potosinos were immediately concerned with mining. Fortunes were also made in commerce by merchants engaged in legal or illegal trading. Hanke, in discussing the role that the Portuguese played at Potosí, reveals the wealth amassed by some merchants:

> When Portugal recovered its independence in 1640 and the Spanish authorities hastily investigated the Portuguese at Potosí, it was found that twenty of the sixty Portuguese listed were very wealthy and that one of them, Antonio Alonso de la Rocha Meneses, had built up a fortune of two million pesos...The rich Antonio Alonso was exiled, four million pesos belonging to other Portuguese were seized, and the Audiencia maintained a vigilant attitude lest the Portuguese engage in subversive actions together with other foreigners at Potosí. 49

Potosinos also trafficked in contraband silver, selling or trading it through Buenos Aires and Brazil, though this was strictly

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[47]Hanke, "Luis Capoche and the History of Potosí," 30-31.

[48]Cañete y Domínguez, Potosí Colonial, p. 21.

[49]Hanke, The Portuguese in Spanish America, p. 23.

forbidden.[50] In 1605 the illegal trade amounted to 500,000 cruzados, and the Spanish authorities were unable to stop it.[51] A route used by Potosinos to smuggle unregistered silver on its way to Brazil was by way of Tucumán. In 1586 Francisco de Victoria, Bishop of Tucumán, sent a ship laden with Potosí silver down to Brazil. The silver was either sold or bartered for cargoes of sugar, conserves, and general merchandise which were brought back in two ships, the second one having been bought in Brazil. While both ships were making their way up the River Plate they were captured by Thomas Cavendish and his English corsairs in February, 1587.[52] The silver black market was carried on by various

[50] Recopilación, Lib. VIII, Tit. 17, Ley 8.

[51] Hanke, The Portuguese in Spanish America, p. 27; also, Colección de Documentos Inéditos para la Historia de España (eds.) Martín F. Navarette, Miguel Salva and Pedro S. De Baranda (Madrid: 1844), V, p. 183. Lamberto de Sierra, treasurer to Charles III in the Villa Imperial de Potosí, reported as follows: "...y otro que por las vantajas que reportaban los mercaderes de plata, vendiéndola hasta el precio de 11 y 14 pesos al marco a los estranjeros por la colonia del Sacramento, que fué de los portugueses, y por la costa del mar del sur a otras distintas naciones, extraian la major parte."

[52] Philip A. Means, Fall of the Inca Empire and the Spanish Rule in Peru 1530-1781 (New York and London: 1932), p. 222; also, Martin J. Lowery, "The Inland Customhouse at Cardoba," Mid-America, Vol. 35: New Series, Vol. 24: No. 1, pp. 19-20. Dr. Lowery shows the Bishop of Tucumán, Francisco de Vitoria, interested in developing the commerce between Buenos Aires and the hinterland. Vitoria's actions were motivated by "religious as well as (by) commercial motives." Dr. Lowery states that, "While commerce with Brazil at this time had been termed illegal, and perhaps was so from the point of view of Madrid, Vitoria and others considered that the joining of the Spanish-Portuguese crowns in 1580 had broken this barrier and they saw no reason for not trading there. As a result the Brazilian trade grew spectacularly within the decade, reaching sufficient proportions to gain the attention of the crown by 1594. At that time, only fourteen years

means. Juan de Aponte Figueroa in his Memorial of 1622 on reforms in Perú, states that it was common practice for some corregidores to buy raw silver which had not been registered and to have Indian silversmiths work it into ornaments and plates. The finished products were then sold secretly, thus depriving the Crown of the royal fifth on the raw silver and the tax on the sale of the finished products.[53]

After 1640 silver production at Potosí was definitely on the decline,[54] caused in part by rising operating cost of the mines and a declining mercury production at Huancavelica. Periodic attempts to keep Huancavelica's production from declining sharply failed and by 1752 the mercury deposits were exhausted.[55] Potosí carried on with the limited and expensive mercury imported from Europe thus adding to the burden of the miners who were faced with the absence of the rich veins that had made a legend of the Cerro. The technological improvements which the Bourbons

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after the opening of the port (Buenos Aires), a blanket prohibition was placed against the Brazilian trade, except in ships which passed through Seville. A further prohibition came two years later, when, in order to make clear to all the status of the Portuguese under the dual monarchy, the Portuguese were formally declared to be foreigners excluded from the trade of the Indies. In spite of these laws, the Brazilian-Platine trade continued to grow, turning more and more to the illegal in the face of outright prohibitory legislation." p. 20.

[53]Juan de Aponte Figueroa, Memorial que trata de la Reformación del Reino del Pirú, quoted in C. E. Castaneda, "The Corregidor in Spanish Colonial Administration," HAHR, IX (1929), 466.

[54]Hanke, La Villa Imperial de Potosí, p. 18.

[55]Manrique, "Descripción de la Villa," p. v.

had hoped to introduce in both Huancavelica and Potosí never materialized, as will be shown in Chapter II. The bright comet which had blazed for nearly two hundred years with declining brilliance was about to spend itself. Writing in 1776, Canete y Domínguez looked upon Potosí and sadly observed what had been left of the city which once boasted of being the largest in the New World. He writes:

> It is a pity to look at the environs of this magnificent city; we look upon the ruins of the town with great pain, and passing by the idle mills and engines about the Cerro, one's sight is met by ruins and houses without roofs; the ruins confirm the original plan of the Villa, which if it were populated once again, it would become a fairly large town. 56

By 1825 the population of Potosí was only 8000;[57] its inhabitants were now searching the Cerro for whatever tin it could yield. The thousands of gaping shafts offer silent testimony to the days when people exclaimed "Vale un Potosí," "It is worth a great deal."

[56]Cañete y Domínguez, Potosí Colonial, p. 129.

[57]Moses, Spanish Dependencies, p. 5.

CHAPTER II

ADMINISTRATION OF THE MINES

Mining in Potosí and in all the Indies was not allowed to Spaniards but also encouraged by the Crown which was in constant need of bullion. Even Indians were allowed to search for silver deposits during the first forty years in order to meet royal demands. However, after 1585 this policy seems to have been discontinued.[1] Perhaps, the most important document we have on the early history of Potosí and its mines between the years 1545 and 1585 is Luis Capoche's Relación, an authoritative description of the discovery and development of the mines as well as the social and economic life of the Villa up to 1585, dedicated to the incoming Viceroy Hernándo de Torres y Portugal, the Conde del Villar, (1585-89).[2] We will refer frequently to Capoche's Relación throughout this and other chapters in our attempt to reconstruct the story of Potosí.

In order to prevent possible conflict of interest, the Crown forbade colonial administrators from buying, selling, or

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[1] Hanke, "Luis Capoche and the History of Potosí," pp. 44-45.

[2] Luis Capoche, "Relación General de la Villa Imperial de Potosí," (ed.) Lewis Hanke. Biblioteca De Autores Españoles Desde La Formación Del Lenguaje Hasta Nuestros Dias (Continuación) (Madrid: 1959), p. 159; also, Hanke, "Luis Capoche and the History of Potosí," p. 22.

dealing in any phase of mining for profits. Jueces, escribanos de minas,[3] and alcaldes mayores de minas[4] were specifically singled out and forbidden to engage in mining; otherwise, the law recognized the right of Spanish citizens and Indians to own and operate silver mines.[5] A royalty of a fifth part of whatever mined was the Crown's share,[6] although, in 1735 it was reduced to a tenth, diezmo, in Perú.[7] All silver bullion had to be brought to the government-operated foundry where it was assayed, cast into bars, and stamped with its weight and quality. A charge of one and one-half per cent was affixed for those services in addition to the royal fifth, quinto real. The bars, stamped with the royal mark, proof that the owner had complied with the law, could then be traded.[8] All silver bullion not thus marked could not be bartered under penalty of death and loss of property to the sell-

[3]Recopilación, lib. IV, tit. 21, ley 1; also, Hanke, "Luis Capoche and the History of Potosí." Hanke states that Capoche does not list any Indian as owners of mines in his Relacion which was completed in 1585; hence, concluding that "as time went on it is likely that the Indians lost in one way or another the mines they had discovered.", p. 45.

[4]Recopilación, lib. IV, tit. 21, ley 2.

[5]Ibid., tit. 19, ley 14. This law states as follows: "Que los Indios pueden tener, y labrar minas de oro y plata, como los Españoles." When ownership is mentioned in this thesis, ownership in fee simple is not meant; for the Spanish Crown never permanently alienated its right to subsoil wealth.

[6]Ibid., lib. VIII, tit. 10, ley 1.

[7]Haring, The Spanish Empire, p. 260.

[8]Ibid., p. 260; also, Recopilación, lib. IV, tit. 22, ley 1; and Lib. IV, tit. 22, ley 7.

er.[9] To discourage the traffic on unregistered silver and gold the Crown offered a generous reward to the informer which was one-third of the metal confiscated. His name was kept anonymous, and the balance of the recovered bullion was divided among the royal officials.[10]

To safeguard the interest of the Crown, the royal exchequer assigned an overseer at the mines and at the assay office[11] in order to discourage irregularities. However, royal officials were not incorruptible. Numerous plots were often hatched by miners and silver merchants with the cooperation of minor officials. Canete y Dominguez concluded in his Potosí Colonial that it was not difficult for the mercaderes de plata, silver merchants, to bribe the assayers and the officials of the mint of Potosí to cheat in the stamping of silver coins. He cites a plot uncovered by Juan Nestarez Marín who was appointed Visitador and Presidente de Charcas in 1649. The latter discovered evidence which resulted in the arrest and conviction of Francisco Gómez de la Rocha, a silver merchant, and Felipe Ramirez de Arellano, ensayador de la Casa de Potosí. The sentence imposed consisted of fines totaling 200,000 pesos and was confirmed by a royal cédula on April 17, 1651.[12] The Licenciado Ravanal, attorney for the Crown from

[9]Haring, The Spanish Empire, p. 260.

[10]Recopilación, lib. VIII, tit. 17, ley 8.

[11]Haring, The Spanish Empire, p. 279.

[12]Cañete y Domínguez, Potosí Colonial, pp. 85-86.

the Audiencia de Charcas, warned the king in his letter of November 3, 1576, that the officials of the Casa de Moneda of Potosí were not to be trusted.[13] Juan Matienzo, sent to Potosí to supervise the residencia of the Licenciado Gómez Herreros and other officials of the city, criticized the officials of the mines for their ineptitude. His charges were detailed in his report of December 23, 1577.[14]

It was the responsibility of the corregidor de indios at Potosí to see to it that the assigned quota of Indians reported to the mines for assignments.[15] The alcalde de minas and the veedor along with the protector de indios supervised the treatment of the Indians and saw to it that the mines were kept in good repair. The office of protector was eliminated by 1585. The alcalde de las aguas supervised the vast network of reservoirs and the alguacíl del cerro enforced the law as constable of the Cerro.[16] The collective responsibility of these officials assured the continuous exploitation of the mines.

Anyone desirous to mine was required to file an application with the Audiencia de los Charcas whose president resided at Potosí. Acceptance of the application was based on discovery of a vein. The licensee was allowed thirty days within which to be-

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[13] La Audiencia De Charcas, I, pp. 425-426.

[14] Ibid., p. 455.

[15] Haring, The Spanish Empire, p. 67.

[16] Monumenta Peruana, III, p. 552.

gin work or lose the right to exploit his discovery. Indians were allowed ninety days. Any miner had the right to pursue a vein, which originated on the site of discovery, and follow it even though it crossed another's property. A provision in the mining laws, however, stipulated that the latter be compensated for any damage incurred and also awarded a share of the profits gained from the ore found on his property.[17] If the original owner of a mine did not work it for a period of four months, the mining rights could be transferred to the informer of the infraction.[18] Juan Matienzo, a close adviser of Viceroy Toledo, was responsible for originating many laws governing mining in 16th century Perú. As oidor de la Real Audiencia de Charcas, having jurisdiction over Potosí, he outlined the physical limitations imposed on ownerships of mines as follows:

> Qualquier descrubidor español que descubriere alguna veta de metal en algún cerro se le den ochenta varas en largo de la veta y quarenta en ancho, y a los demás que se estacasen sesenta de largo y treynta en ancho, y al descrubidor se le de otra mina salteada de sesenta varas, contal que aya dos nymas en medio de ella y de la descubridora. 19

Though primitive methods of extracting the silver ore were used at Potosí until 1572, the yield of the precious metal

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[17]Francisco Xavier de Gamboa, Commentaries on the Mining Ordinances of Spain: Dedicated to His Catholic Majesty, Charles III (translated by) Richard Heathfield. Two vols. (London: 1830), Vol. I, pp. 90-91.

[18]Recopilación, lib. IV, tit. 19, ley 6.

[19]Juan Matienzo, Gobierno Del Perú. Obra Escrita En El Siglo XVI (Buenos Aires: 1910), p. 67.

was great due to the accessability and richness of the ore. Modesto Bargallo, Mexican historian, estimates that the annual payment of the quinto real between 1545 and 1564 was four million pesos and the total production of silver during the same period was 641,250,000 Mexican pesos, a sum which Alexander von Humboldt deemed to be correct.[20] The method employed by the Spaniards was that used by the natives in the time of the Incas: a smelting process which utilized guayras, furnaces about three to six feet high, placed at the sides of the mountain to take advantage of the wind. The disadvantages of the guayras were that they consumed a great deal of scarce fuel, functioned properly only when the wind was blowing in a favorable direction, and were effective only in smelting rich ore.[21] Historian Pedro de Angelis in his introduction to Juan del Pino Manrique's Descripción De Potosí observed:

> Who would believe it that, for example, for more than twenty years the only fuel used in separating the silver ore from the slags was straw...and that the amalgamation of the metals were accomplished by exposing the metals from twenty-five to thirty days to the sun. 22

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[20]Modesto Bargallo, La Minería y la Metalurgía en la América Española Durante la Epoca Colonial con un Apéndice Sobre la Industria del Hierro en México Desde la Iniciación de la Independencia Hasta el Presente (México: 1955), pp. 75-76.

[21]Antonio de Ulloa, Noticias Americanas: Entretenimientos Phísicos-Históricos, Sobre la América Meridional, y la Septentrional Oriental. Comparación General de los Territorios, Climas, y Producciones en las Tres Especies, Vegetales, Animales, y Minerales: Con Relación Particular de las Petrificaciones de Cuerpos Marinos de los Indios Naturales de Aquellos Paises, Sus Costumbres, y Uso; De las Antiguedades: Discurso Sobre la Lengua, y Sobre el Modo en que Pasaron los Primeros Pobladores (Madrid: 1762) p. 255.

He also denounced the lack of any scientific plan in the exploitation of the mines, placing the blame on the beneficiadores whom he described as "gente vulgar e ignorante."[23] While the smelting process continued to be used at Potosí, Bartolomé de Medina introduced in 1556 the patio process of amalgamation of silver ore with quicksilver in the Pachua mines of New Spain. This process made possible extraction of satisfactory quantities of silver from comparatively poor grade ores which was not possible with the use of the guayras.[24] Fortunately for Potosí, Viceroy Toledo quickly realized the advantages of the patio process and commissioned Pedro Fernández de Velasco, a mining expert, to teach this method to the miners of Potosí fifteen years after its introduction in New Spain.[25] Before the patio process could be put to use, the quinto real dropped to 216,517 pesos by 1572, according to a study submitted to the Crown by Lamberto de Sierra, treasurer of the Caja Real de Potosí, in June of 1784.[26] Sierra's report, whose purpose was to trace the financial output of the

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[22]Manrique, Descripción de la Villa Imperial, II, p. III; also, Canete y Dominguez, Potosí Colonial, p. 21. Dominguez states that the fuel used in the smelting process was straw which was plentiful on the Cerro and its surroundings: "...llama de unas pajar (llamadas hicho) de que abundaba el Cerro y sus contornos."

[23]Manrique, Descripción, II, p. I.

[24]Haring, The Spanish Empire, p. 245.

[25]Cañete y Domínguez, Potosí Colonial, p. 21.

[26]Colección de Documentos Inéditos, V, pp. 170-183. In 1557, the quinto amounted to 468,534 pesos; 519,944 pesos in 1565, and 486,014 pesos in 1566.

mines from its beginning to the last quarter of the 18th century, disclosed that the major causes of the decline in the royal tax were due to lack of systematic methods of labor at the mines and contraband silver sold by Potosinos to Portuguese and other foreigners.[27] Perhaps the underlying cause of decline in silver production was the exhaustion of the surface ore. The yield of the 1550's and 1560's when "de cada quintal de metal se sacaba la mitad de plata,"[28] did not compare with that of the beginning of the 1570's. The miners were forced to dig deeper for the elusive ore and to take greater chances and risks; but the thought of experimenting with newer methods of refining the poorer grade ore was seldom considered by many Potosinos. The importance of Toledo and the introduction of patio process can be fully appreciated when viewed against a background of lack of scientific "know-how" and declining production.

Viceroy Toledo, upon his arrival to Perú, undertook a tour of inspection of the viceroyalty and reached Potosí by 1572. There he turned his energies and administrative skills to regulating the labor supply of the mines, pursuing the development of amalgamation of silver ore with quicksilver, and beginning the construction of a network of water reservoirs and water-ways to assure a continuous water supply to the engines which ground the silver ore and to prevent flooding. By modifying the mita, or

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[27] Ibid., p. 183.

[28] Ulloa, Noticias Americanas, p. 255.

rotational work assignment, he assured a steady flow of laborers for the mines, a certain number of Indians drafted for a set period. The mita will be discussed in full in Chapter III. He declared the smelting process obsolete and replaced it with the patio system "no sin fuerte resistencia de los mineros."[29] In order to assure ample supplies of mercury, Toledo expropriated the great mercury mines of Huancavelica, 800 miles from Potosí, and placed them under able administrators who operated them as royal monopolies. From 1572 on silver production at Potosí was closely related to mercury production at Huancavelica, which under new direction began to rise almost immediately. In 1571, under private ownership, 1470 quintales and eleven libras were produced, while under royal administration production rose to 3687 quintales only a year after.[30] The tortuous 800 mile overland

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[29]Capoche, "Relación...", p. 23; also, Hanke, "Luis Capoche and the History of Potosí." Hanke affirms that "in spite of Toledo's efforts and improvements, important technical problems remained unsolved as the shafts and tunnels penetrated deeper into the mountains," p. 34. Capoche vents his exasperation toward his countrymen at Potosí, accusing them of being apathetic and hostile toward innovations. Many inventors traveled to Potosi with ideas and machines conceived to improve the yield of silver by improving the treatment of extracting it from the ore, but only few were permitted to test them. Consequently, Capoche said, few innovations were introduced. P. 34.

[30]Maffei and Rua Figueroa, Apuntes para una Biblioteca Española, I, p. 484. The following is mercury production at Huancavelica mines during Viceroy Toledo's tenure:

1571...1470 quintales, 11 libras	1577...3021 quintales, 22 libras		
1572...3687 " 11 "	1578...6126 " 14 "		
1573...2100 " 20 "	1579...7008 " 20 "		
1574...4646 " 11 "	1580...5300 " 12 "		
1575...4899 " 11 "	1581...4002 " 50 "		
1576...2137 " 22 "	1582...8109 " 14 "		

route from Huancavelica to Potosí was abandoned in favor of a shorter one. The mercury was packed in sheep skin bags at the mines and carried by llama pack trains to the village of San Geronimo, twenty-six leagues from Huancavelica, and from there transferred to mules and brought nine leagues to the coastal town of Cincha on the Pacific Ocean. The mercury was then loaded on vessels which made their way to Arica where it was unloaded and packed on llama or mules and transported to Potosí's government warehouses and held in storage for eventual sale and distribution to the miners.[31] To Toledo, Potosí and Huancavelica were the axis around which revolved the wheels of the entire kingdom.[32] Huancavelica continued to produce an increasing quantity of mercury reaching a total of about 11,000 quintales by 1590, half of which was shipped to Potosí. By 1594 the warehouses in the Villa Imperial held a surplus of 3,000 quintales whose price was set by the viceroy at eighty-five pesos per quintal.[33] So effective was the use of mercury, not only in the amalgamation process but in determining the amount needed to produce a given amount of silver ore, that it was carefully registered in order to estimate how

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[31] Gwendolin B. Cobb, "Supply and Transportation for the Potosi Mines, 1545-1640," H.A.H.R., XXIX (February, 1949), 37-38.

[32] Viceroy Toledo's letter to Philip II, dated November 27, 1579, quoted in Governantes Del Perú (ed.) Levillier, Vol. 6, 175.

[33] Guillermo Villena Lohman, La Minas De Huancavelica En Los Siglos XVI y XVII (Sevilla: 1949), p. 155. also, Beltrán y Rozpide, Coleccion, p. 99n. Huancavelica mercury production from 1571 to 1790 amounted to 1,040,459 quintales.

much silver the miners were extracting by noting the amount of mercury they had purchased. However, the close surveilance by the royal officials could not prevent Potosinos from finding new ways to swindle the Crown.

Viceroy Luis de Velasco (1596-1604) in his Relación to his successor, Viceroy Gaspar de Zuñiga, Conde de Monterey, warned the latter that Potosinos were purchasing the mercury on credit from the government and were in turn selling it at bargain prices, using the money for personal reasons such as providing a dowry for a daughter or repaying a gambling debt. Velasco, wishing to put a stop to this chicanery, forbade the re-sale of mercury at prices below those set by the Real Hacienda and instructed his officials to demand a collateral from the purchasers, hoping eventually to receive payment. The miners, he informed his successor, were a desperate lot and bankruptcy common. However, despite his efforts, the viceroy confessed that he had been unable to put a stop to the contraband which he estimated at one-half million pesos a year during his administration.[34] The viceroy's casual remark about bankruptcy indicates that fortunes could be lost as well as made on the Cerro.

The patio system used at Potosi was as follows: the silver ore was pounded and pulverized in iron-lined wooden receptacles with wooden stamps having iron heads which weighed four arroba each, one hundred pounds, moving in a circular motion and

[34]Beltrán y Rózpide, Colección, pp. 114-115.

powered by water. The ore was then sifted and the larger particles returned to the receptacles to be once again crushed. The fine ore was washed by water in large tubs and after the water was drained mercury and a liquid substance of iron were added, with the content of the tub being stirred at spaced intervals and tempered with water. After this operation was deemed sufficient, the water and earth were separated and discarded leaving only the metals which were transferred to crucibles and heated. Thus, by means of evaporation the mercury was removed from the silver.[35] The purity of the silver depended on the amount of iron and mercury which was left with the silver. It was the responsibility of the ensayador to mark the silver bullion as to its purity.

Water at Potosí always presented a problem. Lack of it interfered with the proper operation of the engines and the washing of the ore; on the other hand, an over-abundance created problems of inundation of the mines and landslides. Canete y Dominguez describes climatic conditions at the Villa:

> Though Potosí is in the tropics it is very cold due to the icy winds that sweep upon it from the snowy Cordilleras. It rains incessantly from November to March. Hail, ice, and heavy snow falls and furious winds from May to September beat upon Potosí, (especially) the unhealthy and furious northern Tomahvi wind. 36

William E. Rudolph, who visited Potosí for two years on a grant from the American Geographical Society, measured the yearly precipitation, 1934-1936, at about twenty-five inches of rain-fall

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[35]Biscay, A Relation of Mr. R. M.'s Voyage, pp. 73-74.

[36]Cañete y Domínguez, Potosí Colonial, p. 137.

in only three months of the rainy season, and practically no measurable precipitation for the rest of the year.[37] The problem of water retention and its vital importance to the Villa was recognized by Viceroy Toledo three hundred and sixty-two years before Rudolph. The viceroy initiated plans for an extensive water work which included the building of a large artificial lake. The lake was named Tabacco Nuno and later renamed Chalviri, located seven kilometers south-east of the Cerro and built with a force of twenty thousand Indians.[38] This project, begun in 1573 and completed in 1621,[39] resulted in a water system which ultimately consisted of thirty-two lakes or reservoirs with a combined capacity of six million metric tons of water supplying one hundred and twenty mills which ground the silver ore.[40] Wood had to be brought to Potosí from great distances "and some beams for the mills were so large that they required sixty Indians to move them."[41] The herculean task begun by the viceroy continued long after his departure from Perú, but his was the moving spirit which gave impetus to the project. An ingenious channel, the Ribera de la Vera Cruz

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[37]William E. Rudolph, "The Lakes of Potosí," American Geographical Society, XXVI, No. 4 (October, 1936), p. 530.

[38]Ibid., p. 531; also, Albaro Alonso Barba, A Collection of Scarce and Valuable Treaties Upon Metals, Mines, and Minerals. Translated by the Earl of Sandwich (London: 1738), p. 79.

[39]Ibid., p. 529; also. Abelardo Villalpaudo Retamozo, La Cuestión Del Indio (Potosí, Bolivia: 1939), p. 14. Retamozo states that 860,000 mitayos were required to finish the lakes of Potosí.

[40]Hanke, La Villa Imperial de Potosí, p. 45.

[41]Hanke, "Luis Capoche and the History of Potosí," p. 33.

de Potosí, five kilometers long and eight meters wide, was fed by a system of aqueducts that conveyed water from the several lakes. The channel crossed through the city and ultimately cascaded from a height of five hundred and ninety-four meters to the mills below the city, its force generating a steady six hundred horsepower for the wooden wheels of the mills. The dams of the artificial lakes or reservoirs were built of earth and masonry and measured eight meters in height and ten to twelve meters in thickness.[42] On March 15, 1626, the San Ildefonso dam burst, destroying one hundred and twenty-six of the one hundred and thirty-two mills, sweeping away over forty-six blocks of Spanish quarters and three hundred and seventy houses along with eight hundred Indian ranchos. The death toll was placed at four thousand people and property damage at twelve thousand pesos. The dam was repaired and restored to operation.[43]

The necessity to dig deeper into the earth to follow the silver veins resulted in the building of tunnels or sacavones, which facilitated the mining of the ore and the carrying of it to the opening of the pits, whence it was carried on the backs of the mitayos. So successful did they prove to be that the viceroys encouraged anyone to build them. The Jesuit, José de Acosta, who visited Potosí in 1585, recorded in his history of the Indies that while he was there eight sacavones were in existence at the

[42]Rudolph, "The Lakes of Potosí," p. 533.

[43]Ibid., p. 537; also, Martínez y Vela, Anales, p. 119.

Cerro, being about two estados in width and one estado in height, and the largest, which had been named the Venino, had been twenty-seven years in the making.[44] The builder of a sacavón had the license to follow a vein no matter in what direction it led, even on someone's property. There were several options which could be exercised by the owner of the mine and the builder of a sacavón: an individual or individuals could build a tunnel or shaft and receive a stated royalty from the owner of the mine. If the builder or builders engaged in mining, they paid to the owner one-fourth of the ore extracted on the latter's property and one-third if the owner shared in the expense of building the sacavón.[45] The financial arrangements varied through the years, since Luis Capoche stated in his Relación that builders of sacavones received one-fifth of the ore mined from the miners who made use of the sacavones.[46] Capoche, owner and operator of a silver mill at Potosi, was an ardent supporter of the importance of tunnels at the Cerro. The tunnels were dug by hand and the walls were supported with stones or timber. Blasting powder was not allowed to be used by the viceroys. When it was employed, it proved to be dangerous, costly, and wasteful.[47] The Jesuit his-

[44]Joseph De Acosta, The Natural and Moral History of the Indies. 2 Vols. Translated by Edward Grimston in 1694. Edited by Clements R. Markham (London: 1880), p. 207.

[45]Matienzo, Gobierno Del Perú, p. 83.

[46]Capoche, "Relación...," p. 104. Sacavones were shafts cut vertically into the Cerro and then running horizontally to connect the principle veins.

[47]Gwendolin B. Cobb, "Potosí, A South America Mining Fron-

torian Bernabe Cobo placed the cost of building a "fairly large" sacavón at twenty to thirty thousand pesos,[48] but the large expenditures were well worth it. The Veta Rica, which became legendary for the great quantity of silver found in it, was exploited with greater intensity only through the aid of sacavones. Bargallo states:

> La Vita Rica tenía 78 minas y algunas de 180 estados y aún 200 de profundidad; los sacavones va de un lado del cerro, por los cuales se entra y sale a paso llano y por ellos se sacan los minerales con facilidad. 49

The ore brought to the surface was packed on alpacas and brought to the mills below the Cerro.

The twelve year rule of Toledo in Perú was marked with progress and some systematization of mining methods at Potosí and Huancavelica, but the problems at both mining centers were more involved than the mere introduction of more advanced mining methods. There were no schools to train miners in up-to-date mining techniques; officials on the local level lacked sufficient knowledge to manage the operation of the mines; violations at the mines could be overlooked by bribing the right persons; and the distance between Lima and Potosí limited the viceroys' effectiveness in demanding compliance with the mining laws and regulations.

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tier," Greater American Essays in Honor of George Bolton (Berkely: 1945), pp. 38-58.

[48]Bernabé Cobo, Historia Del Nuevo Mundo. 4 Vols. (Sevilla: 1890), I, p. 306.

[49]Bargalló, La Mineria..., p. 89.

Of no little perplexity were the masters of the mines who were most reluctant to abide by any legislation which clashed with their designs. Hence, regulations were disregarded in many instances not because of inherent faults found in them, but because they did not serve what the miners thought were their best interests. Local customs of long standing were difficult to suppress. One of these was allowing the hacendados of Potosí to mine on their own account from Saturday night to Monday morning, paying to the owners of the mines one-third of whatever they dug. The inexperience and recklessness of these week-end miners contributed to serious problems at the mines. A description of the Cerro in the 17th century reveals the chaotic conditions:

> Todo esta horodado como una cascabel, y los labores antiguas y modernas son tantos que se cruzan por lo interior de sus entrañas como los vacios de una esponja. No solo los mineros traginan incesantemente estos lugares, sino principalmente los Capchas, que penetran con su codicia los abismos más indondables del Cerro, llevando todos ellos su trabajo trastarnado por la ambición, sin abstenerse de derribar puentes, destruit los frontónes, y hacer cuanto daño pueden en el corto espacio de tiempo que se los tolera. 50

Hiram Bingham who visited Potosí in 1910, reported that records showed that five thousand licenses had been issued to search for silver at the Cerro from 1545 to the end of the Colonial period.[51]

The administration of the mines of Potosí was a challenge

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[50] Maffei and Figueroa, Apuntes, II, p. 146.

[51] Hiram Bingham, Across South America, or account of a journey from Buenos Aires to Lima by way of Potosí with notes on Brazil, Argentina, Chile, and Peru (Boston and New York, 1911), p. 122.

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of no mean proportion to honest officials and an opportunity to gain illicit wealth for those who were willing to use their office for that purpose. Official correspondence with the Crown fills entire volumes which report acts of dishonesty committed by royal officials.[52] Pedro Cieza de León, soldier, traveller, and historian of the 16th century, described an incident that he witnessed at Potosí in 1549, in the following words:

> El licenciado Polo, que cada sábado en su propia casa, donde estaban las cajas de las tres llaves (Caja Real or royal treasury) se hacía fundición, y de los quintos reales venían a su Majestad treinta mil pesos, y veinte y cinco, y algunos poco menos y algunos más de cuarenta. Y con sacar tanta grandeza que montaba el quinto de la plata que pertenece a su Majestad mas de ciento y veinte mil castellanos cada mes, decían que salía poca plata y que no andaban las minas buenas. 53

However, not all dishonest acts were overlooked by the authorities, as reported by Capoche. Veedor Francisco de Oruno ordered that a certain mine be closed until needed repairs were made, declaring that the mine was unsafe. The master of the mine disregarded the order and forced his Indians to continue to work. The mine caved in killing twenty-eight Indians. Brought before the Audiencia de Charcas, the miner was found guilty of gross negligence and fined 8,000 pesos.[54] Generally, however, royal officials were no match for the cunning Potosinos who excelled in de-

[52]See: La Audiencia de Charcas (ed.) Levillier; Gobernantes del Peru (ed.) Levillier; and Ulloa, Noticias Americanas.

[53]Pedro Cieza de León, La Cronica Del Perú, con tres mapas (Madrid: 1932), p. 310.

[54]Capoche, "Relación...," p. 158.

frauding the royal treasury. The report of the Crown's treasurer Lamberto de Sierra, in the last quarter of the 18th century, clearly showed that greater quantities of silver were mined and disposed of clandestinely in order to avoid payment of the quinto real. Quantities, if declared, would have tripled or quadrupled the royal fifth.[55]

A combination of causes contributed to a decline of silver production at Potosi by 1640[56] from which the Villa never recovered. Huancavelica's mercury mines, for some time straining to meet the needs of Potosí for that metal, could no longer supply it in sufficient quantities. As early as 1585 Capoche had questioned the decision of the Conde del Villar to ignore the high consumption of mercury while overlooking a method developed by Carlos Corso de Leca which required much less mercury.[57] Undoubtedly, the rising cost of mercury forced many miners with limited capital out of business. When Juan del Pino Manríque arrived in Perú in 1784 to serve as gobernador intendente,[58] he

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[55]Letter of Lamberto de Sierra of June 16, 1784, to Charles III in Colección de Documentos Inéditos, p. 183.

[56]Ulloa, Noticias Americanas, pp. 256-258; also Hanke, La Villa Imperial de Potosí, p. 18.

[57]Hanke, "Luis Capoche and the History of Potosí," p. 34.

[58]Haring, Spanish Empire, pp. 134-137. The Intendent system was a reorganization of local government in the colonies. The intendentes replaced the gobernadores, corregidores, and alcaldes majores, along with the financial jurisdiction of the officials of the exchequer. The purpose of this new system was to increase royal revenues by improving the administration of the colonies. Each of the eight intendencias in Perú had a gobernador intendente.

found very little technical knowledge about mining procedures at Potosí.[59] Several years later Antonio de Ulloa, Spanish scientist commissioned by the Crown to inspect the colonies, accused the miners of Potosi of wasting mercury, stating that when mercury had first been used, a quintal yielded fifty libras of silver worth one hundred marcos; now (1792), the yield is only four marcos of silver for every fifty quintales of mercury used.[60] These facts caused Ulloa to doubt the competence of the miners whose wasteful management of mercury had caused the shortage of that metal. It became necessary to import mercury from Spain, thus causing the price to spiral upward. Hence, scarcity of mercury, technological backwardness, and waste at Potosí contributed to the unhappy results.

José de Galvez, Charles III's colonial minister, compiled a report which was presented to the Crown in 1771 calling for reforms and re-organization of the colonial mining industry. Eventually, the king acted upon this report that led to the compilation of the Ordenanzas de minería which were finally drawn up in 1783. In the same year a mining guild was established, the Real cuerpo de minería, as a result of Galvez' report. The Ordenanzas called for the setting up of a central tribunal in México City having supreme jurisdiction over all the viceroyalties and a provincial court of delegation in each mining district composed

[59]Hanke, La Villa Imperial de Potosí, pp. 47-48.

[60]Ulloa, Noticias Americanas, p. 255.

of elected representatives from the mine owners and operators. The central tribunal consisted of a Director-General, an Administrator-General, and three Deputies-General. The first Director-General was Fausto de Elhuyar appointed by Gálvez in 1786.[61] As part of the re-organization of the mining industry, thirteen German mining experts were sent to Perú in order to improve existing methods already in use at the mines. The group headed by Baron Thaddeus von Nordenflicht arrived in Peru in 1789.[62]

Anthony Z. Halms, a member of the Nordenflicht mission, recorded his frustrating experiences at Huancavelica and Potosí experienced during his four years' stay. At Huancavelica he was unsuccessful in convincing the mining authorities to build sixteen new furnaces to replace seventy-five obsolete ones.[63] He then moved on to Potosí where his disappointment increased when he met with as much resistance as he had encountered at Huancavelica. His words blister with indignation recalling the opposition of the Potosinos:

> ...still greater, if possible, was the ignorance of the directors of the smelting-houses and refining works at

[61] Fausto de Elhuyar was a Spanish engineer trained in Germany and Scandinavia. His skill and knowledge of mining techniques was unparalleled in Spain. Haring, Spanish Empire, p. 248.

[62] Ibid., pp. 246-248; also, The Ordinances of the Mines of New Spain. Translated from the original Spanish. With observations upon the mines and mining associations, translated by Charles Thomson (London: 1825), p. 9.

[63] Arthur Preston Whitaker, The Huancavelica Mercury Mine-A Contribution to the History of the Bourbon Renaissance in the Spanish Empire (Cambridge: 1941), p. 69.

> Potosí; by their method of amalgamation they were scarcely able to gain two-thirds of the silver contained in the rude ore; and for every mark of pure silver gained, destroyed one and frequently two, marks of quicksilver. Indeed, all the operations of the mines at Potosi...are conducted in so slovenly, wasteful, and unscientific a manner, that, to compare the excellent method of amalgamation practiced in Europe, with the barbarous process used by the Indians and Spaniards, would be an insult to the understanding of my readers. 64

Helms accused the delegates in the mining districts of trying to enrich themselves through acts of tyranny while the Viceroy in Lima remained indifferent to what was happening.[65] He charged that the mines were being worked in total disregard of mining laws and regulations, as if "merely for the sake of plunder" and leaving the mines in wretched condition.[66]

Summarizing the efforts of the Mission, C. H. Haring places its failure on the owners and operators of the mines who were unwilling to depart from the established customs, and on the local deputies who were for the most part corrupt, inefficient, and disposed to favoritism.[67] The Nordenflicht Mission thus ended without effecting any changes at Potosí and Huancavelica, costing the Crown over 400,000 pesos[68] when it formally disbanded in failure by 1810.[69]

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[64]Anthony Z. Helms, Travels from Buenos Aires by Potosi to Lima (London: 1806), p. 45.

[65]Ibid., p. 87.

[66]Ibid., p. 102.

[67]Haring, Spanish Empire, p. 249.

[68]Ibid., p. 249 n.

[69]Whitaker, The Huancavelica Mercury Mine, p. 69.

CHAPTER III

THE MITA: INDIAN LABOR IN THE MINES OF POTOSI

It is an unquestioned fact that working conditions throughout Europe remained rigorous well into the 16th century; thus, it is not surprising that similar conditions prevailed in the Spanish colonies throughout the colonial period. The Spanish Crown, unlike many European governments, as early as 1512 had taken steps to safeguard the well-being of the Indians with the enactment of the Laws of Burgos which decreed that encomenderos supply Indians with food, build houses, Christianize them, and educate Indian chiefs and their sons in return for Indian labor. In 1542 Charles V promulgated the New Laws which, among other things, freed the Indians from personal service to the encomenderos and moderated tribute payments.[1] Many other directives were dispatched to colonial administrators insisting on proper treatment of the natives. However, royal decrees were commonly ignored. The Recopilación de leyes de los reynos de las Indias is perhaps the greatest collection of laws compiled by any colonial power for the administration of conquered territory, but as Arthur Zimmerman stated, "to reconstruct, therefore, the Spanish

[1]Arthur F. Zimmerman, Francisco de Toledo, Fifth Viceroy of Peru 1569-1581 (Caldwell, Idaho: 1938), pp. 39-41; also, Lesley B. Simpson, The Encomienda in New Spain (Berkeley: 1929).

colonial system on the basis of the Recopilación alone would be to reconstruct a Utopia that never existed."[2] The execution of the royal legislation was entrusted to administrators whose sense of duty, at times, was tempered by the pursuit of self-interest and the great distance which separated them from Spain. This chapter will deal with the colonial administrators with special emphasis on the mita of the silver mines of Potosí.

Luis de Velasco, ninth viceroy of Perú (1596-1604), defined the mita, as conceived by the Incas, as "repartimiento limitado de los indios que han de servir en cada provincia para que por su turno (o vez) vayan todos entrando en el."[3] In pre-Hispanic times the Indians were required to render service to the Incas by working for well-defined periods on the construction of roads, by tending the flocks, making silver objects and pottery, cultivating and harvesting the fields, and working the mines. Many of their chores benefited the community as a whole as well as the Incas. The workers were chosen for their ability to fulfill certain tasks in an alloted time, leaving them sufficient leisure to tend to their personal pursuits.[4] With the discovery

[2]Zimmerman, Francisco de Toledo, p. 8.

[3]"Relación Del Sr. Virrey, D. Luis De Velasco, Al Sr. Conde De Monterrey Sobre El Estado Del Perú," Colección De Las Memorias O Relaciones Que Escriben Los Virreyes Del Perú..., p. 109.

[4]Francisco Falcón, "Representación Hecha Por El Licenciado Falcón en Concilio Provincial, Sobre Los Daños y Molestias Que Se Hacen A Los Indios," Informaciones Acerca de la Religión y Gobierno de los Incas (ed.) Horacio H. Urtega (Lima: 1918), p. 144.

of precious ores in the viceroyalty of Perú, however, the Spaniards required large numbers of Indians especially in the mining frontier of Potosí.[5] Precedent for paid forced labor of Indians in the mines and factories is found in the practice of the Spanish corregidores de indios, in charge of collecting tribute from the Crown Indians, who hired out the natives to anyone who needed laborers.[6] Therefore, it became apparent to Spanish colonial administrators that the Indians constituted an easily available pool of workers with whom exploitation of the mines could be achieved. It is the consensus of many historians that the system of forced labor in Perú was effectively organized by Toledo, fifth viceroy of Perú.[7] Whether Toledo was inspired by the Incan system or by his fellow Spaniards is debatable, however, Philip Means accusingly declares that though Viceroy Toledo could find Incaic precedent in the mita, he had perverted this system. Under the Inca rule, asserts Means, the caciques had little power over the Indians but gained civil and criminal jurisdiction under

[5]Audiencia de Charcas, I, p. 683. Letter of October 1, 1566, sent by Potosinos to the Presidente and Oidores de la Audiencia requesting more Indians.

[6]Haring, Spanish Empire, p. 58.

[7]James J. Carney, Jr., "The Legal Theory of Forced Labor in the Spanish Colonies," University of Miami Hispanic-American Studies. No. 3. (Eds.) Robert E. McNicoll, J. Riis Owre (Coral Gables, Florida: 1942), p. 33; also, Capoche, "Relacion..." (ed.) Hanke, notas, p. 55; also, Colección De Las Memorias O Relaciones Que Escriben Los Virreyes... (ed.) Beltrán y Rózpide, I, pp. 176-177; also, Philip A. Means, Fall of the Inca Empire and the Spanish Rule in Perú: 1530-1780 (New York, London: 1932), p. 130; also, Guillermo Lohman Villena, El Conde De Lemos Virrey Del Perú (Madrid: 1946), p. 246; also, Haring, The Spanish Empire, p. 58.

the system developed by the Viceroy. This power, Means continues, became an oppressive tool which the caciques wielded for their own aggrandizement at the expense of the Indians.[8] There is no evidence, however, that points to an attempt by Toledo to secure the cooperation of the caciques at the expense of the Indians. On the contrary, corregidores and alcaldes mayores were instructed to protect the Indians from their caciques,[9] to make sure that the natives were paid their wages,[10] and to see that crimes committed against them be punished with greater severity than those committed against Spaniards.[11]

Viceroy Toledo designated an area of 150 leagues around Potosi and divided it into sixteen provinces with 119 pueblos from which a yearly quota of approximately 13,000 Indians between the ages of eighteen and fifty, in good health, was drawn and divided into three shifts of four months each.[12] The mita was based on one-seventh of eligible Indians; hence, a mitayo who finished his turn was not subject to recall for another seven

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[8]Means, Fall of the Inca Empire, pp. 129-130; also, Cristobal De Molina, "La Despoblación Del Peru," Las Crónicas De Los Molinas (ed.) Francisco A. Loayza. Grandes Libros De Historia Americana, Serie I, Tomo IV (Lima: 1943), p. 80; La Audiencia De Charcas (ed.) Levillier, I, p. 455; Villena Lohman, El Conde De Lemos, pp. 248-249.

[9]Recopilación, lib. VI, tit. 2, ley 24.

[10]Ibid., lib VI, tit. 15, ley 9.

[11]Ibid., lib VI, tit. 10, ley 21.

[12]Villena Lohman, El Conde De Lemos, p. 247; also, Maffei and Figueroa, Apuntes, II, pp. 193-194.

years.[13] The *corregidores de indios* and the Indian *caciques* of each *pueblo* were responsible for meeting the quota and sending the recruits on their way to Potosí where they would be assigned to licensed miners for appointed periods. Only viceroys, presidents, or governors were authorized to determine or change the working hours.[14] Generally, the work week was set at five days with work starting at seven in the morning and ending at six in the evening.[15] To supplement the *mita*, steps were taken to establish Indian *pueblos* or reductions around mining centers,[16] such as Potosí, and to encourage free laborers to work at the mines.[17] The Crown expressly forbade the dislocation of Indians from warm regions to cold ones[18] and prohibited the use of Indians assigned to mining for any other work.[19] Systematically, the *mitayos* were sent to Potosí from the following *corregimientos*: Arequipa, Nuestra Señora de la Paz, Urcos, Porco, Chicas, Chayanta, Cochabamba, Challacollo, Canas, Canshes, Carangas, Sicasica, Pacajes, Chucuito, Copacavana, and Pancarcolla. These *corregimientos* em-

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[13] *Recopilación*, lib. VI, tit. 12, ley 21.

[14] *Ibid.*, lib. VI, tit. 12, ley 12.

[15] Emilio Romero, *Historia Económica y Financeria Del Perú, Antiguo Perú y Virreynato* (Lima: 1937), p. 147.

[16] *Recopilación*, lib. VI, tit. 3, ley 9.

[17] *Ibid.*, lib. VI, tit. 15, ley 2; also Hanke, "Luis Capoche and the History of Potosí," p. 38. Free laborers were called *mingados*.

[18] *Recopilación*, lib. VI, tit. 1, ley 3.

[19] *Ibid.*, lib. VI, tit. 15, ley 15.

braced an area extending from twenty-five miles south-east of Cuzco down to and around Lake Titicaca and running south-easterly along the eastern side of Lake Popo and from there down to and around Potosí.[20]

The mitayos scarcely satisfied the labor needs of the Cerro; thus the shortage of laborers opened the door to abuses and corruption. Spaniards who had Indians in their service attempted to hire them out to miners, though forbidden by a law of 1549 which imposed a penalty of one hundred thousand maravedis and loss of their charges.[21] Even the corregidores who were charged to convert the Indians, to tax them justly, to prevent the Indian chiefs and lay or religious Spaniards from stealing from them, indulged in hiring out natives to miners, thus supplementing their modest salaries. The corregidor of Potosí earned a salary of only 2,000 pesos.[22] Cristobal de Molina who was pastor of Our Lady of Our Remedies chapel in the hospital of Cuzco in 1553, describes the methods employed by the corregidor in exploiting the Indians in these words:

> The corregidor forces the Indians to make yearly 3,000 lengths of rope which he has sold in Potosí for 40,000 pesos. He pays, if he chooses to pay at all, such small wages to the Indians that it is nearly the same as if he did not pay them...He forces Indians to work in the mines

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[20]Means, Fall of the Inca Empire, pp. 185-186.

[21]Recopilación, lib. V, tit. 2, ley 26; also, Villena Lohman, El Corregidor De Indios En El Perú Bajo Los Austrias (Madrid: 1957), p. 509.

[22]Recopilación, lib. V, tit. 2, ley 1.

> 100 or 200 leagues from their homes, and for himself...He buys and sells Indians uprooting them from their homes and the climate to which they are accustomed, and causing some to die. In other words, the Indians from the Sierra are sent to the plains and those from the hot valleys to Potosí. 23

The corregidor was all-powerful in his corregiemiento. Not even the thought of the residencia, a review of his conduct while in office, tempered his actions. Often the judges of the residencia were contacted by a representative of the corregidor and offered a substantial bribe, thus "practically all of the corregidores were acquitted without a blemish."[24] Antonio de Ulloa, in reviewing many matters pertaining to Peru from the beginning of the colonial period to the last quarter of the 18th century, held the corregidor in low repute. He reported that in a certain town of Peru there was a bag in the office of the corregidor which contained 4,000 pesos, representing the pay-off of the departing corregidor to the judge of the residencia and to his successor. The bag had not been opened for many years, being handed down from corregidor to corregidor.[25] Ulloa's investigation also revealed that corregidores made a practice of taking census of Indians in every pueblo under their jurisdiction and assigning them

[23]Molina, "La Despoblación Del Perú," Las Crónicas...,pp. 81-82. Cristobal de Molina, "El Almagrista," took part in the expedition of the Conquistador Diego de Almagro in the conquest of Peru. The Recopilación, lib. V, tit. 2, ley 25, states that no governor, corregidor, or ecclesiastic could force Indians to manufacture ropes for them.

[24]Castañeda, "The Corregidor in Spanish Colonial Administration," H.A.H.R., p. 466.

[25]Ulloa, Noticias Secretas, pp. 259-261.

merchandise, repartimiento de mercaderia, of doubtful value and extremely over-priced. The Indians had two and one-half years to pay for it before they were forced again to buy more worthless merchandise.[26] There is no reason to assume that the Indians of Potosí escaped the greed of these officials who reduced "the people in such misery that it cannot be compared with that of the most wretched people in the world."[27]

Sundays and holy days were days of rest.[28] On Monday morning the Indians were collected at the foot of the Cerro where the corregidor de minas distributed them to the masters of the mines, to work until the following Saturday. Each Monday the Indians were counted and a record made of those who had died, been injured, or had escaped. This procedure required the better part of the day causing irritation among the miners and officials who complained that it was not until the next day that work was effectively begun.[29] The caciques were required to replace those Indians from their districts who had died, who were unable to work any longer, or who had escaped, or face a fine of seven and one-half petacones a week for each replacement they were unable to to provide.[30] This regulation caused the caciques to press very

[26] Ibid., p. 244.

[27] Ibid.

[28] Recopilación, lib. I, tit. 1, ley 14.

[29] Villena Lohman, El Conde De Lemos, p. 247.

[30] Ibid., p. 248.

hard for more laborers, who in order to avoid being drafted, paid off handsomely.[31] Those who could not afford to pay fled in large numbers.[32] Work in the mines of Potosí had always taken a toll among the predominantly pastoral Indians. While the mita had been intended to distribute the work-load evenly, collusion among miners, corregidores and caciques actually made possible the detention of the mitayos beyond the stated work period, overdrawing on the quota, and often not meeting the quota.[33] In his Relación to his successor, Viceroy Juan de Mendoza y Luna, Marqués de Montesclaros (1607-1615), advised the Principe de Esquilache that some Indian pueblos had quotas of one-sixth or one-fifth of eligible males rather than the customary one-seventh.[34]

Viceroy Francisco de Borgia Aragón (1616-1621) informed the incoming viceroy, Diego Fernández de Córdoba, Marqués de Guadalcazar (1621-1627), that the mines have greatly suffered in recent years from the practice of commuting the work of the Indians in the mines for a money payment.[35] Forty-six years later, during the rule of Viceroy Pedro Fernández de Castro y Andrade, conde de Lemus (1667-1672), it was estimated that the practice was still in effect and that commutation money amounted to 700,000

[31] Ibid., p. 249.

[32] Ibid., p. 251.

[33] Ibid., pp. 248-249.

[34] Coleccion De Las Memorias..., I, p. 161.

[35] Ibid., p. 223.

pesos yearly. Some Indians were shifted at will from one mine to another because some miners were able to obtain more than their share of mitayos. They, therefore, hired out a number of them to other miners and received as much as 365 pesos a year for each Indian. This chicanery gained profits which were not reported and thus escaped the royal tax.[36]

Those who saw the operations at the mines and the work expected from the Indians were appalled at the sight. Fray Domingo de Santo Tomás, a disciple of Bartolomé de las Casas, wrote to the Council of the Indies twenty years before the arrival of Toledo in Peru that Potosi was "una boca del inferno que se tragaba anualmente miles de inocentes y pacificos indios," and accused the Spaniards of treating the Indians like "animales sin dueño" by forcing them into the mines where many perished.[37] The Licenciado Lope García de Castro, who ruled Perú as provisional viceroy until the arrival of Toledo, informed the Crown in his report of January 12, 1566, of the lack of justice shown toward the Indians in the district administered by the Audiencia de Charcas.[38] In 1577 the Licenciado Juan Matienzo, oidor de la Audiencia de Charcas from 1561 to 1579, advised the Crown that during his stay at Potosí he found mines inundated and in bad re-

[36]Villena Lohman, El Conde De Lemos, p. 251.

[37]Hanke, La Villa Imperial de Potosí, p. 51.

[38]Gobernantes Del Perú (ed.) Levillier, III, pp. 131-143.

pair.[39] In his Relación of 1604 Viceroy Velasco wrote, for the benefit of his successor, the Conde de Monterey, that many Indians became ill and died in the mines of Potosí because of the excessive work.[40] Unquestionably, the Indians were not physically or emotionally prepared to endure the fever-pitch pace set by the Spaniards who, in the words of Viceroy Diego López de Zuñiga y Velasco (1563-1566), would rather die of hunger than work in the mines.[41] However, the viceroy dismissed suggestions to use Negroes in the mines rather than Indians because the former were not accustomed to the cold climate of Potosí, while the latter could be induced to work by treating them well and paying good wages.[42] While the welfare of the Indians was of great concern to the Crown and some Potosinos, it was not shared by the majority of the miners intent on exploiting the riches of the Cerro:

> La mayor parte de los mineros...dan de día y de noche molestísimas tareas a los Indios, y siempre les parece que trabajan poco; que cuando la codicia hace oficio de obrero, no hay peón tan alentado que no parezca lerdo, ni diligencia que no parezca sorma. 43

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[39] La Audiencía de Charcas (ed.) Levillier, III, p. 457.

[40] "Relación Del Sr. Virrey, D. Luis De Velasco, Al Sr. Conde De Monterey Sobre El Estado Del Perú," Colección De Las Memorias..., p. 109.

[41] Constantino Bayle, S. I., España En Indias, Nuevas Ataques y Nuevas Defensas (Vitoria: 1934), p. 211.

[42] Ibid.

[43] Villena Lohman, El Corregidor De Indios En El Perú, pp. 132-133; also, Hanke, "Luis Capoche and the History of Potosí," p. 41. Capoche states that some Spanish masters abused the Indians.

Fray Antonio de La Calancha (1584-1654), renowned Peruvian chronicler, denounced the suffering of the mitayos of Potosí as follows: "Oh, how cruel is nearly every official of the mines to the miserable Indians. The supervisors are without pity. How deaf is justice! How blind are their consciences!"[44]

The plight of the Indians had been recognized by the Crown for some time and steps had been taken to lessen their load. In 1609 it was decreed that henceforth Negroes and not Indians should be employed in removing water from inundated mines.[45] To supplement the work of the mitayos, Spaniards, mestizos, Negroes and free mulattos were to be induced to work in the mines.[46] Working conditions for the mitayos of Potosí and the rest of Perú, however, did not improve appreciably with time. Don Diego de Luna, Protector-General of the Indians in Perú, in his Memoria of 1629 advised the Crown that the mita threatened the Indians with extinction and suggested that it be abolished.[47] Juan de Padilla, one of the oidores of Lima, compiled in 1657 a report for the

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[44] Los Cronistas De Convento (ed.) José de la Riva Aguero. Biblioteca de Cultura Peruana. Primera Serie No. 4 (Paris: 1938), p. 132. Father Calancha describes an incident which happened at the Cerro of Potosí. In the year 1590, one hundred Indians were buried alive in a mine which had been found dangerous by the mine inspector. The owner of the mine had been warned that repairs were urgently needed and he was ordered to begin immediately; however, he failed to do so, thus causing the death of one hundred Indians. P. 131.

[45] Recopilación, lib. VI, tit. 15, ley 12.

[46] Ibid., lib. IV, tit. 19, ley 13.

[47] Means, Fall of the Inca Empire, pp. 181-182.

Crown in which he detailed the abuses heaped upon the natives and recommended reforms.[48] Haring states that though attempts were made to ameliorate existing conditions little was achieved, since Ulloa's investigation in the last quarter of the 18th century revealed that wretched conditions still prevailed in Perú.[49] The welfare of the Indians and that of the Spaniards appeared to be incompatible. The Spaniards felt that only through a large and cheap labor force could the mines of Potosi be profitably exploited. Importing a great number of Negro slaves to replace the Indians would pose problems of numbers and plain economics. Spanish communities, fearing uprisings, hardly ever relished a preponderance of Negroes in their communities. Thus, they preferred to avail themselves of the services of the more docile and numerous Indians already in their midst. Moreover, Negro slaves cost a great deal of money.

The slave trade into the Spanish colonies, however, had its start at the beginning of the 16th century and in one form or another continued until the end of the colonial period. By the Treaty of Utrecht of 1713, England's South-Sea Company was allowed to import 4,800 Negroes in the Spanish colonies,[50] some of whom were possibly destined for Potosi to augment several thou-

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[48]Hanke, La Villa Imperial De Potosí, p. 52.

[49]Haring, The Spanish Empire, p. 66.

[50]Wilhelm Roscher, The Spanish Colonial System. Translated by Edward G. Bourne (Cambridge, Mass: 1944), p. 38; also, Haring, Spanish Empire, pp. 204-205.

sands already there.[51] However, encouraging more Indians to work the mines remained a steadfast policy of colonial administrators. A royal cédula of January 13, 1627, instructed Viceroy Diego Fernández de Córdova (1621-1627), to order the miners to pay travel allowance to and from Potosi to the mitayos. Viceroy Córdova was unable to enforce it since the miners refused to comply.[52] In his Relación to his successor, Jerónimo Fernández de Cabrera Bavadilla y Mendoza, he stated that other viceroys found the Potosinos a very difficult lot and that the Prince of Esquilache, his immediate predecessor, also was unable to carry out a royal wish to assign land to all the mitayos who came to Potosí. Esquilache informed Córdova that 12,747 mitayos with an average family of four people arrived at Potosí each year and there was not enough land to dole out to 38,241 people; beside the land around the Villa was "inculta y esteril."[53] The miners continued to clamor for more laborers, cheaper mercury, and less interference from royal administrators. Mining at the Cerro had increasingly become a speculative adventure leading in many cases to financial insolvency for many. Since the Crown did not provide any of the capital needed for mining operations, the miners turned to pri-

[51]Martínez y Vela, Anales, p. 70. Vela states that by 1611 there were six thousand Negroes in Potosí.

[52]"Relación del Marqués de Guadalcazar," Colección De Las Memorias, II, p. 14.

[53]"Relación Que El Principe De Esquilache Hace Al Señor Marqués De Guadalcazar Sobre El Estado En Que Deja Las Provincias Del Perú," Colección De Las Memorias..., I, pp. 217-218.

vate backers known as aviadores, to whom they became heavily indebted.[54] Striking a rich vein, therefore, was the dream of every mine operator. The stake of the mitayo, on the other hand, was merely his pay of four reales for a day's work,[55] and danger of losing his life in the depths of the Cerro or while climbing the long and dangerous ladders to the surface of the mine. When the readily accessible veins were exhausted, it became necessary to dig deeper and deeper into the mountain reaching depths of 200 estados or more. Ladders "de más de sesenta estados" wide made of rawhide twisted in such a fashion as to allow wooden rungs to be slipped through to make them rigid, were used to reach the surface from the bottom of the pits. Every seventy-five feet wooden platforms were to be found that served as resting stop-points for those carrying heavy loads. The ore which had been dug was loaded in leather bags, each weighing from two to three arrobas, and carried by the Indians to the surface. To illuminate the way, the mitayos tied velas de sebo, candles of suet, to each thumb,

[54] George Juan and Antonio de Ulloa, A Voyage to South America Describing at Large the Spanish Cities, Towns, Provinces, etc. on That Extensive Continent: Undertaken by Command of the King of Spain. Translated by John Adams. Two Vols. (London: 1806), II, p. 148.

[55] There seems to be an inconsistency with regard to the wages of the mitayos; it is possible that since wages were set by the viceroys, they might have varied from time to time. The following sources are presented: Villena Lohman, El Conde De Lemos, p. 247. Mitayos received four reales a day or twenty a week. Ulloa, Noticias Americanas, p. 265. The pay was four reales a day, though "there are mines in which they are paid one peso daily." Capoche, "Relacion," p. 109. Mitayos were paid three and a half reales a day, while some were paid four.

thus freeing the hands to hold on to the ladder. Father Bernabé Cobo, who saw this operation, deplored the hardships endured by the Indians who were forced to breathe the fetid air heavy with harmful vapors, suffer the heat of the pits, carry heavy loads, work under the threat of landslides, and experience the sudden coldness of the surface after having worked in the stiflingly hot pits.[56] He further stated that the greatest fear among the Indians working at the Cerro was being buried alive by the frequent land-slides.[57] Injuries among the Indians were so numerous that the Conde de Chinchón, 18th viceroy of Perú (1627-1628), decreed that miners should be deprived of mitayos in the event any of the latter received head wounds, lost the use of an arm or leg, suffered cruel lashings, or fled because of ill treatment. In the event that an Indian died as a result of negligence on the part of the miner, the latter was obligated to pay the Indian's tribute to the Crown for twenty years and an indemnity of fifty pesos to the widow and children.[58]

A royal pronouncement of 1729 prohibited the mita throughout the viceroyalty; however, its enforcement was suspended due to pressure brought to bear by colonial administrators and miners. Arthur Whitaker affirms that "the mita continued in opera-

[56]Cobo, Historia Del Nuevo Mundo, I, pp. 306-307; also, Hanke, "Luis Capoche and the History of Potosí," p. 41.

[57]Cobo, Historia Del Nuevo Mundo, I, p. 307.

[58]"Relación del Conde de Chinchón," Colección De Las Memorias..., II, pp. 91-92.

tion until the end of the colonial period, modified by the increasingly common practice of commuting the personal service by a money payment."[59] In 1780 Tupac Amaru led an Indian revolt which was sparked by the excesses perpetrated upon the Indians through excessive taxation, lack of social and political freedom, and the mita.[60]

There is no doubt that royal decrees were often disregarded or at best obeyed sporadically by colonial administrators, due perhaps to indifference, cupidity, or lack of courage to face the opposition from those who had much to gain from the indiscriminate exploitation of the Indians. The Crown, on the other hand, impaired in part by the great distance which separated it from the colonies, vacillated between its desire to protect the Indians and its duty to promote the interests of the colonists and the establishment of an essentially dominant Spanish society in the New World. The royal dilemma had the unhappy result of keeping the Indians of Potosí and Perú in a base condition. As Hanke points out:

> Spain desired to Christianize and civilize the Indians, but the Crown desperately needed money and Spaniards in America could neither supply this aid nor support themselves in the style to which they wished to be accustomed unless Indians and others did the work. 61

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[59]Whitaker, The Huancavelica Mercury Mine, p. 21.

[60]Daniel Valcarcel, La Rebellión De Tupac Amaru (México and Buenos Aires: 1941), p. 40.

[61]Hanke, "Luis Capoche and the History of Potosí," p. 50.

According to Javier Prado y Ugarteche, Peruvian historian, only one-tenth of the mitayos survived the mita.[62]

[62] Javier Prado y Ugarteche, Estado Social del Perú Durante la Dominación Española (Lima: 1894), p. 157.

CHAPTER IV

HEALTH HAZARDS AND MAJOR EPIDEMICS IN POTOSI

It is difficult to ascertain accurately the death toll among Indians due to epidemics and occupational health hazards. Henry F. Dobyns, in his "An Outline of Andean Epidemic History to 1720," traces the major epidemics which plagued Perú claiming thousands upon thousands of lives and occuring in waves rendering the populace, already weakened by previous pestilence, practically helpless to ward off new onslaughts.[1] Dobyns also points out that there was a great divergence of opinion at the time in identifying the diseases which cannot be completely resolved even today, because the symptoms were indicative of more than one disease which struck from different directions. A case in point is the epidemic period of 1585 to 1591, when typhus was introduced in Spanish America by a group of Negro slaves from the Cape Verde Islands. The slaves had been brought to Panamá and distributed to the ports on the west coast of South America, thus spreading the infection southward. The epidemic reached Potosi by 1589 and was described by Father Pablo José de Arriaga in his report of 1590 to the General of his order.[2] About the same time, a mea-

[1] Bulletin of the History of Medicine, XXXVII, No. 6 (November-December, 1963), pp. 496-497.

[2] Ibid., p. 503.

sles and smallpox epidemic erupted at Cuzco and spread northward to Lima, Quito and Santa Fe de Bogota.[3]

Early in its history Potosí was stricken by a pestilence which lasted from October, 1560, to January, 1561. Martínez y Vela recorded that once the disease was contracted it killed its victims within twenty-four hours. He stated that

> ...y lo que más admiro, fue la varación, pues unos se hindraban desde los pies hasta el estómago, y morían: otros, abrasados de una fiebre maligna, a los dos días expiraban; otros se llenaban de ampollas, de las cuales reventaban un humor amarillo, y así acaban sus dias. 4

He further recounted how the Potosinos assembled in great numbers in the church of San Lorenzo to pray for an end to the dreaded pestilence, invoking the intercession of Saint Augustine with a devout procession through the streets of the city and how a heavy rain interrupted the procession and drenched the area for three days. At the end of the downpour the pestilence ceased.[5]

In 1589 Viceroy Torres y Portugal reported to the king that "there were days when more than 10,000 Indians and some Spaniards sickened in Potosí...another illness of cough and catarrh with fever."[6] Dobyns identified the epidemic as influenza. A diphtheria epidemic hit the Bolivian highlands. It originated in Cuzco in 1614 and reached Potosi by 1615, claiming thousands

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[3] Ibid., p. 501.

[4] Martínez y Vela, Anales, p. 23.

[5] Ibid., p. 24.

[6] Dobyns, "Outline of Andean Epidemic History...," Bulletin, p. 505.

of lives by strangulation.[7] Though Potosi's position was somewhat isolated, there was a great deal of traveling to and from this mining center. Spaniards from the Old World, Negro slaves, and contact with the port cities of Arica and Arequipa facilitated the spreading of highly infectious diseases.

The measles epidemic of 1692-1694 had its origin in Quito and spread southward to Lima, Huamanga, Arequipa, and Potosí causing "great mortality."[8] From 1694 to 1718 the population of the Bolivian plateau had grown by a sizeable number since it did not experience any severe epidemic; hence the reason, according to Dobyns, for the great number of deaths claimed by the influenza epidemic of 1718-1720.[9] The symptoms which were recorded indicated that the infection was extremely contagious and in many instances fatal. Dobyns stated that "the infection was extremely contagious, as attested by high mortality among barbers who treated infected patients, those who buried the bodies, and even the llamas which packed the bodies of the dead to the churches for burial."[10]

John Tate Lanning, in his "The Rise of Modern Medicine in Spanish America," attaches great significance to lack of sanitary conditions as being a definite factor in the spread of epidemics.

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[7] Ibid., p. 509.

[8] Ibid., p. 510.

[9] Ibid., p. 511.

[10] Ibid., p. 513.

Lanning claims that

> In view of the sanitary conditions throughout the colonies, it comes as no surprise that some parts of Perú were visited on an average of every four years between 1525 and 1825 by epidemics of smallpox, measles, syphillis, typhoid fever, itch, dysentery, diphtheria, bubonic plague, yellow fever, rabies, whooping cough, which took from 200,000 lives down at each blow, and there was a horror of the dead bodies which ended not until the very bricks of the death chamber had been pulled out. 11

Epidemics are events which hardly escape being recorded. They are awesome in their destruction and usually of relatively short duration. Thousands of lives are snuffed out while the survivors develop an immunity which serves as a safe-guard against contracting the same infection. However, there afe other dangers to life which can cause bodily malfunctions and eventually cause death. These dangers inflict harm to the human body more slowly than epidemics, but often with the same finality. To the occupational health hazards at Potosí and at its mines we shall devote the rest of the chapter.[12]

The Indians in Potosí were forced to labor long hours under extremely unhealthy conditions. Emilio Romero, though defending Spanish administration of the mita as the sole means to exploit the mines, conceded that "si junto al trabajo excesivo se hubiera acordado una base de salario capace de mantener la vida y la salud de los trabajadores, los rudimentos económicos habrían

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[11] University of Miami Hispanic-American Studies, pp. 64-65.

[12] Dr. Philip Thomsen, Thomsen Clinic, Dolton, Illinois, and Dr. Fred Coe, Michael Reese Hospital, Chicago, Illinois, have been consulted.

sido superiores."[13] The system, Romero felt, was just but its practice showed little of the concern which the Crown felt toward its Indians.[14] Bernabé Cobo writing about the mines of Potosí, affirmed that the Indians "pasan increible trabajo y afán" and are forced to breathe the stale and harmful air and vapours of the pits to their detriment.[15] The climate was another factor which affected the well-being of the natives. The cold, dry air was unbearable to all except the Sierra Indians. Those from warmer regions experienced severe difficulties in fulfilling their demanding chores. Lewis Hanke in his introduction to Capoche's Relación... described their plight as follows:

> Los naturales, traidos desde las comarcas mas bajas, morían facilmente en el clima crudo de Potosí, muchos caían en el camino, y las terribles condiciones del trabajo en el Cerro mataban a un número aun mayor, de suerte que pronto cundía por dondequiera el pánico. 16

Food for the Indians was another problem. Though it was bountiful at Potosí it had to be brought into the city from great distances thus causing prices to rise to a level which was beyond the reach of most mitayos. The Indians' diet consisted of chupé, a soup made from dried potatoes, maize and occasionally the meat of the llama.[17] Helen Douglas-Irvine stated that "flour was as

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[13] Emilio Romero, Historia Económica y Financiera del Perú, p. 173.

[14] Ibid., p. 144.

[15] Cobo, Historia Del Nuevo Mundo, I, pp. 306-307.

[16] Biblioteca de Autores Españoles (ed.) Hanke, Notas, 25.

[17] Bingham, Across South America, p. 9.

valuable as silver dust, eggs as lumps of silver, and many wily traders found that their opportunity to make fortunes was equal to that of the mine holders."[18] According to Vela, during peak years of the 16th century a bushel of flour cost forty pesos, a chicken four, five, or even six pesos, and an egg from two to four reales.[19] Due to the meager pay of the mitayos it is safe to assume that their diet was well below standard even for the time. The only recourse the Indians had to supplement their diet was to slaughter llamas and alpacas which they had brought to Potosi as pack animals. Cobb stated that though forbidden to kill these animals, the Indians did so.[20] Those who were not able to secure meat enjoyed a diet which lacked in carbohydrates, fats, and proteins which are derived from meat and are essential to the basal metabolism and well functioning of the body. An insufficient intake of these essential nutrients could result in pellagra which causes alimentary, nervous and mental disorders, thickening of the skin, and eventually death in severe cases. Cirrhosis of the liver and edema, abnormal water retention followed by inflamation, were other possibilities. Alcohol is also a contributing factor in liver disorder, aided by the fact that at 10,000 feet of altitude the damaging effects of alcohol double.

[18] Douglas-Irvine, "All the Wealth of Potosí," Pan-American, pp. 58-59.

[19] Martinez y Vela, "Anales...," Colección De Documentos, pp. 293-294.

[20] Cobb, "Supply and Transportation for the Potosí Mines," H.A.H.R., p. 31.

Viceroy Toledo had tried to prevent drunkedness among the Indians by opening taverns and encouraging them to drink moderately and at certain times;[21] however it was not difficult to find Spaniards who would sell wine to those who could afford to pay. The lack of green vegetables, tomatoes, and citrus fruit were possible causes for scurvy with symptoms of hemmorrhage, bleeding gums, painful joints, and fragile bones.

Perhaps the greatest single disorder among the mitayos of the mines was that which caused respiratory diseases. Both Capoche and Father Cobo noted the harmful effects on the Indians caused by the chilling surface air, after having labored in the stifling heat and dampness of the pits. Dr. Fred Coe stated that respiratory diseases resulting from working in the mines must have been fatally dangerous. He said that:

> The extreme long working hours in what appear to be cold and damp pits, would suggest chronic bronchitis and pneumonia as the primary respiratory diseases. Apart from accidents, pneumonia may have been a major cause of death. Emphysema may well have developed in those that lived past fifty years of age. 22

Cholera and typhoid epidemics are explicable on the basis of poor public health, according to Dr. Coe. Gwendolin Cobb estimated that the Indians who arrived at Potosí to work in the mines brought along as many as 30,000 to 40,000 llamas each year.[23]

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[21] Hanke, "Luis Capoche and the History of Potosí," pp. 36-37.

[22] Interview with Dr. Coe, September, 1964.

[23] Cobb, "Supply and Transportation for the Potosí Mines," pp. 31-32.

The Potosí-Arica pack trains employed as many as 5,000 llamas per train.[24] Thus, it appears that excrement of llamas, other animals, and even human excrement must have presented a problem of disposal of no mean proportion and a health danger. The bacteria of the typhoid fever causes a reduction in white blood cells known as leucocytes and resulting in leucopenia, a disorder which deprives the most important function to the white blood cells: to fend off infections. Leucopenia can also result from the degeneration of the bone marrow due to improper diet; hence, another reason for the greater casualties and severe infections among the Indians.

The indiscriminate use of coca among the Indians at Potosí recorded by Luis Capoche,[25] Francisco Falcón,[26] and substantiated by Dr. Joseph A. Gagliano in his "The Coca Debate in Colonial Perú"[27] was a serious health hazard. Romero stated that 100,000 baskets of coca were sold each year in Potosí.[28] Dr. Coe affirmed that "the use of a strong stimulant and the altitude coupled with the very heavy work may well have caused heart failure even in native mountain dwellers." Dr. Gagliano's study on the coca issue deals extensively with the problem posed by the

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[24] Ibid.

[25] Capoche, "Relación...," p. 175.

[26] Falcon, "Representación...," p. 165.

[27] Gagliano, "The Coca Debate...," Americas (July, 1963), p. 59.

[28] Romero, Historia Económica, p. 230.

use of coca by the Indians. The efforts of the prohibitionists and the cultivators of the leaf involved the Crown, two church provincial councils, and many colonial administrators in an attempt to arrive at a solution to this problem. Dr. Gagliano summarized the outcome as follows:

> Regal toleration gave the coca habit a juridical status in the viceroyalty. For the next three centuries, the mastication of the coca and its use in various highland superstition would continue. 29

The heavy work-load that the Indians had to endure cannot be over-emphasized. The owners of the mines drove the Indians to dig deeper into the earth, perhaps as much as 200 estados where the supply of oxygen was not adequate and water hampered the work.[30] Father Antonio de la Calancha bitterly criticized the owners who looked upon the mitayos "as indolent beasts who needed prodding with clubs and other means of persuasion."[31] The fact that the Indians, too, were subject to the physical laws was ignored by some Spaniards. Poorly oxygenated blood due to the depths of the pits caused apathy and serious weakening of the body. The heavy loads, "dos o tres arrobas de peso en las espaldas"[32] which they were required to carry up long and narrow ladders to the surface, strained their enfeebled muscles. Without

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[29]Gagliano, "The Coca Debate," p. 63.

[30]Ruth Kerns Barber, Indian Labor in the Spanish Colonies (University of New Mexico Press, Albuquerque, New Mexico: 1932), p. 100.

[31]Los Cronistas De Convento (ed.) Aguero, p. 132.

[32]Cobo, Historia Del Nuevo Mundo, I, pp. 306-307.

adequate rest periods, an excessive amount of lactic acid, which could not be broken down by the body mechanisms, and carbon dioxide accumulated in the body system in dangerous quantities. The presence of the former in overly normal quantities caused extreme fatigue; while an abnormal level of carbon dioxide caused extreme discomfort and air hunger. No evidence has been found by the writer which indicated that proper rest periods were allowed the mitayos during their work day at the Cerro.

Arthur Whitaker described the four main occupational hazards of working in the Peruvian mines, those of Huancavelica or Potosí:

> Working in the mines held four main occupational hazards. Gas, apparently carbon monoxide forming deep in unventilated parts of the mine and killed suddenly without warning, pneumonia resulting from coming from the intense heat of the mines into the open, and the cold air. The other danger resulted from cave-ins and accidents of the mines.[33]

Biscay, who visited Potosí, recorded his observations of work at the mines:

> They [Indians] are sometimes very much incommoded by winds, that are shut-up in the mines; the coldness of which, join'd to that of some parts of the earth, chills 'em so excessively, that unless they chewed cocoa, which heats and fuddles 'em, it would be intolerable to 'em. Another great hardship which they suffer, is, that in other places the sulphorous and mineral vapour are so great, that it strangely dries 'em up, so that it hinders 'em from free respiration: and for this they have no other remedy, than the drink which is made with the herb of Paraguay; of which they prepare a great quantity to refresh and moisten them, when they come out of the mines at the time appointed for eating and sleeping. 34

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[33]Whitaker, The Huancavelica Mercury Mine, p. 17.

[34]Biscay, A Relation..., p. 73.

Though the Spaniards were spared the rigors and health hazards which faced the Indians in the mines, they were not exempt from the epidemics which ravaged Perú and Potosí. Measles, smallpox and other diseases of the Old World were not so deadly to the Spaniards as they were to the Indians, but influenza and other infectious diseases took their tolllamong the conquerors.[35] Altitude must have been a serious problem for the Spaniards. The rarified air at 14,000 to 16,000 feet above sea level will cause an abnormal rise in the number of red blood cells and the disease known as polycythemia, which can predispose to gastrointestinal ulcers and heart failure, according to Dr. Coe. The high mortality rate among new born infants at Potosí can be attributed to lack of maternal care during pregnancy, unskilled midwives, infectious diseases such as diarrhea, especially among the new born, and inadequate maternal and child nutrition. Canete offered an explanation regarding the high mortality rate among infants. After refuting Father Calancha and the chronicler Mendoza, who blamed the extreme temperature as the cause of death among infants, he states that it was due to the "poca cautela en el uso de los braseros."[36]

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[35]Martínez y Vela, Anales, p. 294; also, Dobyns, "An Outline of Andean Epidemic History," p. 501.

[36]Cañete y Domínguez, Potosí Colonial, p. 141. The meaning of Cañete's observation is not clear. Perhaps he is referring to the excessive smoke that the braziers gave off that proved fatal to the infant or to the fact that they did not produce enough heat to keep the new-born child sufficiently warm. Basic medical information contained in Chapter IV can be verified

In summary, life in Potosí held many health hazards for Spaniards and Indians alike, but for the latter the problem was compounded by a marginal existence and exploitation.

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in Diana Clifford Kimber et al, Anatomy and Physiology, New York, 1959; Anton J. Carlson and Victor K. Johnson, The Machinery of the Body, Chicago, 1947.

CHAPTER V

CONCLUSION

One of the saddest pages of Spanish history was the exploitation of the Indians at Potosí by the owners of the mines and by the royal officials assigned to prevent maltreatment of the natives. Ironically, no other colonial power, in the history of conquests, sought as earnestly as Spain to justify its conquests not in terms of victory and subjugation over a vanquished foe, but in terms of acquired stewardship and just government. The Spaniards enacted laws which assured the rights of the Indians, their conversion to Christianity, and the spreading of Spanish civilization. However, the implementation of this human legislation proved to be the most vexing problem to the kings of Spain throughout the colonial period.

From the very beginning, many Spaniards raised their voices in protest and penned reports to audiencias, to viceroys, to the Council of the Indies, and even to the Crown in which they condemned the maltreatment of the natives. Alfonso Messia, an agent of Viceroy Velasco, informed the latter that the Indians at Potosí were not paid or fed well, worked day and night at times, and their work period was extended through the connivance of the

miners and the caciques.[1] The Dominican, Miguel de Monsalve, suggested to Philip III that steps be taken to alleviate the grave problems of the Indians, pointing out that they were sent to the mines of Potosí, Porco, Salinas, and Chocolococha while their women were loaded down with work, molested, and even kept as mistresses by the corregidores and caciques.[2] Father Rodrigo de Loaysa, writing on the condition of the Indians at Potosí, compared the latter to sardines which are pursued and devoured by larger fish. Father Loaysa warned that, unless the Indians found support and protection, they would suffer the same fate as the sardines.[3] On the other hand, the miners claimed that the mines could not be worked without an adequate supply of native laborers, who for the most part were lazy and shiftless.

Up to 1565, the religious were frequently the only direct representatives of the Crown among the Indians, at least, as Father Antonine Tibesar says, "until the institution of the corregidores de los Indios by Licenciado Castro in 1565."[4] This of-

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[1]"Memorial dado al virey del Perú, D. Luis de Velasco, por Alfonso Messia, sobre las cédulas y démas despachos relativos al servicio personal de los indios," Colección De Documentos Inéditos Relativos Al Descrubrimiento, Conquista y Colonización De Las Posesiones Españoles En América y Occeania, Sacados, En Su Mayor Parte, Del Real Archivo De Indias. 42 Vols. (eds.) Joaquin F. Pacheo y Francisco de Cardenas (Madrid: 1864), VI, pp. 118-158.

[2]Miguel de Monsalve, "Reducción de todo el Pirú, y demas Indias, con otros muchas autos, para el bien de los naturales dellas, y en aumento de las Reales Rentas," Las Crónicas De Los Molinas (ed.) Francisco A. Loayza (Lima: 1943), p. 11.

[3]Capoche, "Relación...," pp. 58-59.

[4]Antonine Tibesar, Franciscan Beginnings in Colonial Perú (Washington, D. C.: 1953), pp. 35-36.

fice was held by many unworthy individuals who exercised an almost unrestricted power over their charges. Though their responsibilities were clearly stated, they exploited the Indian corregimientos for all that they were worth. Juan de Aponte Figueroa described the corregidores of Perú as "locusts who consume everything and lay waste the land."[5] Why did the Crown allow the existence of such a wretched condition? The Crown was locked on the horns of a dilemma. On the one hand, it wished to give the natives justice and an opportunity to embrace the Catholic religion and whatever civilization they were able to absorb; while on the other hand, "as Spanish rulers the kings sought imperial dominion, prestige, and revenue--in short, conquest and the fruits of conquest."[6] Madrid thus continued to issue new directives to cope with new abuses, thus hoping to prohibit the latter and at the same time allow the development of its colonial holdings. The distance which separated Spain from the new world also necessitated the Crown's dependence on its officials to carry out or enforce royal mandates.

Generally speaking, the colonial administrators in Perú were a venal lot who placed their interests above the welfare of the Indians. There were many notable exceptions in the various administrative arms of the king, such as in the Audiencia de

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[5]Juan de Aponte Figueroa, "Memorial que Trata de la Reformación del Reino del Pirú," Colección de Documentos Inéditos para la Historia de España (Madrid: 1867), p. 324.

[6]Lewis Hanke, The Spanish Struggle for Justice in the Conquest of America (Philadelphia: 1949), p. 173.

Charcas and in the office of the viceroy at Lima. At times honest and able administrators filled these offices and carried out their responsibilities with vigor, while at other times viceroy and audiencia were either indifferent or at odds with each other. Men such as Viceroy Toledo worked out "many laws and administrative regulations...for the Indians---which won for him the name of 'Solon of Perú'," [7] but their reforms were short-lived. [8]

The greatest single factor at Potosí which stood in the way of justice and fair treatment of the Indians was the miners' determination to be the unchallenged masters of the Cerro and to brook no interference with the management of the mines and the Indians placed in their charge. They formed a powerful lobby and sent representatives to Spain to protect their interests. [9] Frequently violence erupted in Potosí, causing Viceroy Córdoba to advise his successor, the count of Chinchón, in 1627 that all arms should be kept out of Potosí and sixty leagues around the city because there was danger that the old seditions and violence might be rekindled. [10] Throughout the history of Potosí, the miners exerted a stubborn and negative attitude toward any attempt to change the status quo at the Cerro. Changes were adopted

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[7] Ibid., p. 172.

[8] "Relación Del Sr. Virrey, D. Luis De Velasco (II), Al Sr. Conde De Monterey Sobre El Estado Del Perú," Coleccion De Las Memorias (ed.) Beltrán y Rózpide, pp. 118-119.

[9] Hanke, La Villa Imperial, p. 58.

[10] "Relación del Marqués de Guadalcazar," Memorias, I, pp. 15-16.

slowly. As late as the last quarter of the 18th century, when the Crown attempted to adopt technological improvements over the archaic mining methods at the Cerro, some Potosinos were able to prevent reforms. The Nordenflecht Mission ended in failure principally from lack of cooperation from the miners and from colonial administrators who represented outside interference. Juan del Pino Manrique, Alcalde de Corte de la Audiencia de Lima in 1788, staunchly supported the scientific mission which was authorized by the Crown to improve the sagging output of the Potosí mines. Manrique was amazed in not being able to find in Potosí any technical books dealing with mining.[11]

In addition to a definite lack of more sophisticated know-how, the Cerro suffered from want of a steady and adequate labor force. The mita, which was intended by Viceroy Toledo to remedy this situation, failed to do so because the stated quota was seldom met. The Indians heard about the appalling conditions in the mines. Some had experienced harsh treatment at the hands of their caciques and corregidores. As a result, many resorted to paying a commutation fee to escape being sent to Potosí, while those who could not afford to do so fled to remote areas where they could not be found.[12] Haring states that, at the beginning of the discovery, the Indians, as free vassals of the Crown, re-

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[11] Quoted in Maffei and Figueroa, Apuntes, II, p. 641.

[12] "Relación...Hecha Por El Excmo. Señor Don Juan De Mendoza y Luna, Marques de Montesclaros, Al Excmo. Señor Principe de Esquilache," Memorias, I, pp. 176-177.

ceived by law equal rights with Spaniards to discover and work the mines; however, the exercise of this right was of short duration and even "doubtful if they were allowed to enjoy the privileges."[13] The Spaniards had also hoped that many of the Indians who had come to Potosí would remain after their prescribed work period and continue to work in the mines as free laborers. Though some did remain, the number was not sufficient and their performance as free workers unsatisfactory.

There is no doubt that Potosí became a legend during the 16th century as the world's richest silver-producing center. However, that distinction was won dearly with the lives of thousands of Indians. Some argue that the Spaniards' conduct toward the natives at Potosí was no worse than that of other European nations in their conquests; but, unlike other European nations, with the exception of Portugal, Spain's claim in the New World was based more on a religious mandate than on the basis of conquest. Its right to hold land and govern the natives had been sanctioned by the papacy with the stipulation that the natives be evangelized and brought into the true faith. Unfortunately, at Potosí the quest for silver overrode any other considerations.

Much work is still required to obtain a clear picture of what happened at Potosí. We have been able to touch upon only a few facts. Perhaps, this point should be emphasized: what happened at Potosí cannot obscure the fact that the evils inflicted

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[13]Haring, The Spanish Empire, p. 245.

upon the Indians were perpetrated by a small segment of the Spanish population in the New World whose thirst for wealth overpowered their Christian obligations. Perhaps, as long as Potosí will be remembered so will men remember the mita and its evils, but the blame must be placed squarely where it belongs: on the shoulders of those miners and royal officials who schemed to use the natives as their personal property no matter what hardships the latter were to endure, and this in defiance of royal legislation and protection designed to protect the Indian from the miserable lot which actually befell him.

APPENDIX

SPANISH WEIGHTS, MEASURES, AND MONETARY VALUES

Libra	.46006272 kilograms--1.0142642 Avoirdupois pounds
Onza	28 grams . . . . . -- .0633908 Avoirdupois pounds
Quintal	100 libras--46.025 kilograms--101.5 Avoirdupois pounds
Arroba	25 libras--11.506 kilograms--25.36 Avoirdupois pounds
Tomín	12 granos--.00059 kilograms--.0013 Avoirdupois pounds
Cuartillo	.12 U. S. gallons
Jarra	2.17 U. S. gallons
Medio	.06 U. S. gallons
Pie	10.97 inches
Estado	1.83 yards
Vara	32.91 inches
Linea	.076 inches
Kilómetro	.62137 miles
Legua	2.81 miles
Hacienda	25,000 varas x 5,000 varas--21,684.97 acres
Marco	8 onzas--7.40 Troy ounces
Onza	8 ochavos--.92 Troy ounces
Ochavo	2 adarmes--.116 Troy ounces
Tomín	12 granos--.019 Troy ounces
Grano	.0016 Troy ounces

SPANISH COINS WITH THEIR APPROXIMATE PAR VALUE IN UNITED STATES

Currency for the year 1936:

Castellano (Gold)--in 1612 worth $4.5574
in 1686 " 28.8150
in 1719 " 28.8150

Duro (Silver)--Stamped in June of 1497 at value of $2.7442

Maravedí (Copper)--from 1537-1566 worth $0.0099
from 1609-1625 " 0.0076
from 1625-1636 " 0.0071
from 1636-1638 " 0.0063
from 1638-1641 " 0.0061
from 1641-- " 0.0052

Marco (Silver) worth 6.3375

Peseta (Silver)--in 1598 worth $0.7775
in 1621 " 0.7775

Peso or Real de a Ocho (Silver)--from 1642-1886 worth $1.5844

Peso Duro (Silver)--from 1800 worth $1.8230

Sources: J. Willasana Haggard, Handbook For Translators of Spanish Historical Documents. Photoprinted by Semco Color Press. (Oklahoma City: 1941), pp. 76-107.

Manuel Carrera Stampa, "Evolution of Weights and Measures in New Spain," H.A.H.R., Vol. XXIX (1949) pp. 10-17.

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APPROVAL SHEET

The thesis submitted by Louis J. Casa has been read and approved by three members of the Department of History.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

August 3, 1966
Date

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Signature of Adviser